THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LV. SATURDAY, SEPTEMBER 14, 1889. NO. 11.

ORIGINAL LECTURES.

LENTICULAR REGULAR ASTIGMATISM.

A Lecture delivered before the Post-Graduate School of Ophthalmology. Session of 1888–89.

BY SWAN M. BURNETT, M.D.,

PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY IN THE UNIVERSITY OF GEORGETOWN; OPHTHALMIC SURGEON TO THE GARFIELD HOSPITAL; AND DIRECTOR OF THE EYE AND EAR CLINIC AT THE CENTRAL DISPENSARY, WASHINGTON.

GENTLEMEN: We have learned from our preceding studies that the refracting apparatus of the eye consists of the cornea and crystalline lens. We have also learned that the ordinary so-called anomalies of refraction are not, strictly speaking, anomalies of refraction at all, but only variations in the anterior-posterior diameter of the eyeball, the refracting apparatus proper taking but little part in the production of either myopia or hypermetropia. I have myself demonstrated by a large number of measurements of the cornea by means of the ophthalmometer of Javal and Schiötz that the refraction of the cornea, which is the principal refracting medium of the eye, is no sort of an index to the general refractive condition of the eye as regards its being myopic or hypermetropic.[1] The refraction of the cornea of an emmetropic eye I have found may vary from 47 D. to 39 D.; the average being from 43 D. to 45 D. And I have found, also, that in myopia there may be a low corneal refraction and in hypermetropia a refraction of the cornea in excess of some highly myopic eyes.

We are, unfortunately, not in a position to determine with the same ease or accuracy the refraction of the crystalline lens. We cannot measure the curvature of its surfaces as readily as we can those of the cornea, but we have no reason to suppose from what knowledge we have that its static refraction varies sufficiently in different individuals to bring about any important changes in the general refraction of the eye. Moreover, the changes at the fundus of the eye in myopia which we are able to distinguish by means of the ophthalmoscope, in the form of stretching and thinning of the choroid, and the evident flattening of the globe, which is often apparent on external inspection in hypermetropia, are quite sufficient proofs that the true cause of general ametropia is an alteration in the position of the retina in its relation to the focal point of the refracting apparatus of the eye as a whole. Whenever, therefore, we use the term "anomalies of refraction," we should add, mentally at least, "in relation to the length of the eyeball."

The case is quite different, however, when we come to astigmatism, and particularly to the regular form in which the refraction in the meridians at right angles to each other is different. It is true that an attempt was once made to attribute some astigmatic effect to an irregularity of the curvature of the fundus at the macula lutea, but it certainly cannot occur very often nor to any considerable extent in the production of regular astigmatism.

We are now able to assert that in the vast majority of cases regular astigmatism has its seat wholly in the cornea, and is thus really the only anomaly of refraction, properly speaking, among the various forms of ametropia. In the statistics already alluded to, it was found that only in a rather small minority of cases was the total amount of astigmatism essentially different from that found in the cornea by the ophthalmometer of Javal. My further experience extending now to several hundred cases in addition to those reported in the paper referred to, has only more strongly confirmed the opinion then expressed, and it is, moreover, in perfect accord with the observations of all others who have made any extended use of this valuable instrument. And I wish to state again, with added emphasis, my firm belief in the great practical utility of this most ingenious apparatus. In my treatise on astigmatism, published in 1887,[1] in which is to be found the first description of the instrument printed in English, I stated that in my opinion it was the most important instrument for positive diagnosis placed in our hands since the invention of the ophthalmoscope. The constant daily use of the instrument since that time has in no way modified the favorable opinion then expressed, and I never deem a case of refraction complete in its examination until the cornea has been measured in all its meridians. I am pleased to know that in this position I am sustained by so high an authority as Prof. Snellen, of Utrecht, the successor of the immortal Donders. It has been objected in some quarters, that while ingenious it is not practical. On the contrary, I claim that it is more easily and successfully manipulated than any other of the apparatus of the ophthalmological armamentarium.

Its more extended employment is prevented, I think, by two causes. First, its cost, which in this country has been about one hundred and fifty dollars, inclusive of duty; though that, perhaps, has not been so much of an obstacle as the second, which is the great difficulty of getting them when wanted. It has sometimes taken three years to get one after it has been ordered. This latter difficulty however, seems now likely to be obviated by the undertaking of a new firm in Paris (A. Goubeaux, 216 Boulevard St. Germain) which promises to keep a stock of the newest and best patterns on hand at two hundred and fifty francs net.

The instrument is used but little in Germany, which can be attributed only to an unworthy national pride, which prevents the Teuton of this generation from accept-

[1] An analysis of the refraction of 576 healthy human corneæ examined with the ophthalmometer of Javal and Shiötz. Trans. Amer. Oph. Soc., 1888.

[1] A Theoretical and Practical Treatise on Astigmatism. J. H. Chambers, St. Louis. Pp. 123–133.

ing anything as good "which comes out of Nazareth." As Javal himself once wrote me "when there appears a German modification of the ophthalmometer then it will come to a general acceptance." As, however, Javal has produced an instrument so nearly perfect for its purposes that it is scarcely possible to make any modification that shall be an improvement, we fear that the most practical astigmometer yet devised must remain to the credit of the French. It is curious, too, that it is used but little, if at all, in Great Britain. When, however, the British are once brought to a realizing sense of its true merits, and know its practical advantages, their customary conservatism will give way and they will begin to employ it.

The constant use of the ophthalmometer (or more properly the *keratometer*, since with it we measure the refraction of the cornea alone) has enabled us to discover the important fact to which allusion has been made, that regular astigmatism is for the most part resident in the cornea and that there are very few corneæ that are perfectly spherical in form; a small amount of corneal astigmatism—rarely less than 0.25 D.—being found in eyes which to the test are emmetropic.

Another interesting fact which has been brought to light by those examinations, is that corneal astigmatism is, with the rarest exception, "according to the rule"—that is, the meridian of greatest refraction is the vertical The opposite condition, where the greatest refraction is in the horizontal meridian and "contrary to the rule," must then be sought for in some other part of the refracting apparatus. These facts lend support to the opinion that the pressure of the lids plays an important part in the production of the common forms of astigmatism.

But while it is a fact that the corneal astigmatism commonly represents very nearly the total astigmatism of the eye, the exceptions are frequent enough to merit our attention and interest.

Of course, the only other part of the eye which could possibly be concerned in the production of astigmatism is the crystalline lens. It is a curious fact in the history of astigmatism that the first recorded case of the anomaly was demonstrated to be resident in the lens. Thomas Young, the great English philosopher, who gave us numerous and valuable facts, hints, and suggestions in regard to the pure optics of the eye, but led succeeding generations entirely astray on the subject of color-perception, on immersing his eye in water, thereby eliminating the refraction of his cornea, found his astigmatism still persistent. He conceived, and I think very properly, that the astigmatism was due to a position of the lens oblique to the visual axis. It is further interesting to note that the usual law of lenticular astigmatism being "against the rule" was kept in this case, since the far point of his eye for rays diverging horizontally was seven inches, and for those diverging vertically was ten inches, making an astigmatism according to his own calculations of one-twenty-third.

We demonstrated to you in the earlier part of this course how a spherical lens held obliquely to incident pencils takes on an astigmatic action, having two focal lines at right angles to each other and at different distance from the lens, instead of a single focal point. This view of the lenticular cause of astigmatism was the one universally accepted until the measurements of the cornea made in Helmholtz's laboratory in Heidelberg by Knopp, in 1859, led to the discovery that the cornea was the chief seat of the anomaly, and that Young's case was exceptional. Some years later, however, Dobowolsky found, in making some measurements of the cornea by means of the ophthalmometer, that the corneal astigmatism did not always express the exact amount of the manifest general astigmatism, being usually greater. He assumed, therefore, an astigmatism of the lens, opposite in kind to that of the cornea, with a neutralizing influence, and which he thought was brought about by an unequal contraction of the ciliary muscle such that the curvature of the lens instead of being, as in its normal condition, that of a sphere, would assume that of a spheroid with one meredian of greatest and one of least refraction at right angles to each other. He considered, as have others since he wrote, that this unequal contraction of the ciliary muscle was voluntary, or, at least, brought about by the instinctive desire of the individual for the most distinct vision he could get. Javal, among others, has also found that a certain amount of corneal astigmatism is in early life not incompatible with normal vision, becoming "manifest," however, as soon as the accommodation begins to lose power with age.

It has always been a difficult matter for me to understand how such an unequal contraction of the ciliary muscle in its various meridians was possible; nor do I fully appreciate teleological mechanism which enables the muscle to contract with just the inequality that shall neutralize an existing anomaly in the cornea. However, if the fact is as many competent observers state, we must accept it whether we can account for it to our perfect satisfaction or not. Certainly, we know that corneal astigmatism is often covered up by lenticular astigmatism of an opposite character, and becomes manifest only after paralysis of the ciliary muscle.

It is our habit, therefore, when we find the corneal astigmatism, as measured by the keratometer, to be in excess of that revealed by a careful examination by the test-glass, the ophthalmoscope, and skiascopy, to paralyze the accommodation for further examination. I say "careful" advisedly, for very often a small amount of mixed astigmatism escapes detection unless it is diligently sought for. Very often a cylinder of 0.5 or 0.75 D. of an opposite kind and with its axis at right angles to that which has given the best, but not perfect vision, will advance the visual acuteness from $\frac{5}{8}$ to $\frac{5}{5}$, satisfy all the demands of the corneal astigmatism, and render the use of a mydriatic unnecessary. It is only when no glass or combination of glasses comes up to the requirements of the astigmatism of the cornea, that I consider an elimination of the accommodation absolutely demanded for the diagnosis of astigmatism. As far as concerns general ametropia and the presence of a "latent" hypermetropia, it is another matter and the custom of different and equally competent authorities is by no means the same. As for myself, I do not consider a pathological spasm of the accommodation to be the almost constant accompaniment of ametropia, as seems to be the prevalent opinion in some quarters.

The manner in which the accommodation influences the character of astigmatism of the eye, as a whole, is not confined to the partial contraction of the ciliary muscle already alluded to. The contraction of the ciliary muscle in its entirety has a very pronounced

and variegated effect upon the general astigmatism. As you can readily understand, the act of accommodation in moving forward the focal lines of the interval of Sturm can convert a simple or compound hypermetropic into a simple myopic or even a compound myopic astigmatism; or might mask a mixed astigmatism, converting it into the simple or compound myopic form.

I think experience has shown that there is a desire, for most visual purposes, to have the vertical lines most distinct when all cannot be made so. This accounts, in my opinion, for the conversion, in so many instances, of hypermetropic astigmatism, axis 90°, into the myopic form, axis 180°, by a tonicity of the ciliary muscle which, from long habit, becomes a fixed and, as it were, a normal condition, and which can often not be made to disappear even after a prolonged use of atropine.

But I believe that the accommodation, acting as a whole, may influence astigmatism in yet another way, and in a manner to which but little, if any, attention has been paid By a rapid alternate contraction and relaxation of the ciliary muscle, first one and then the other focal plane is brought on the retina, and thus, while all the lines of a test-letter, for example, are not seen distinctly at once, they are each seen clearly in such rapid succession as to enable the individual readily to distinguish the whole. This, however, can only happen when the ciliary muscle is very strong and the lens very plastic, as it is in early life. As soon as the lens begins to harden it loses its facility in thus rapidly responding to the accommodative impulse, and the corneal astigmatism, which was "latent," becomes manifest. And, in my judgment, many, if not a majority, of those cases of what were supposed to be partial contraction of the ciliary muscles in early life fall into this category.

There is still another form of lenticular astigmatism, the corollary of this, of which I have not seen mention made anywhere. My attention was called to it by my friend, Prof. Harkness, of the Naval Observatory, who takes a great interest in physiological optics as well as optics generally. He finds, he tells me, that since he has arrived at the age of fifty years, after using his accommodation in reading for some time, there is developed quite a perceptible amount of astigmatism for distance, revealing itself particularly in the appearance of distant points of light. He explains this, and, I think, correctly, by assuming that the lens, after the stress of accommodation has passed off, does not assume its normal spherical shape at once or equally, some sectors being less pliable than others and requiring a longer time to get into the normal form.

But lenticular astigmatism due to an oblique position of the lens, such as described by Young, is undoubtedly of more frequent occurrence than is generally supposed. The obliquity may be due to traumatism, as in the following case, which was recently under observation:

A boy of fifteen was struck in the left eye with a bean discharged from a bean-shooter. When first seen, some ten days after the accident, there were found two ruptures in the choroid downward and inward from the optic disk, and a dislocation of the lens upward and inward. The lower and outer edge of the lens was clearly visible through the pupil, which was very much dilated, as the result of the blow, and it showed striations of opacity extending from one to two millimetres toward the centre. The iris was tremulous at its upper inner portion. Skiascopy gave myopia of 5 D., axis 45° (meridian at 135°, corresponding approximately to the direction of the dislocation), and M. 1. D in the opposing meridian. In that eye V. $> \frac{5}{LX}$; with $= 0.75 \bigcirc - 3.5$ D. 45°, it came up to $\frac{5}{XVIII}$. The keratometer showed both corneæ to be spherical, each having a refraction of 44 D. in all meridians. The right eye was emmetropic. At the end of four months the conditions were essentially the same. In this instance there can be no doubt that the astigmatism was lenticular, and due to an oblique position of the lens, since a prolonged use of atropine failed to change the condition in any important degree.

But aside from these traumatic cases, there remains a category where the obliquity of the lens is evidently congenital. Moderate degrees of obliquity, such as to cause 0.5 D. of astigmatism, I believe to be rather common. We often find the corneal and total astigmatism to differ by that amount, even when we are sure that the accommodation does not come in as a factor. We generally find, also, that in such cases the general astigmatism is less than the corneal. We can readily understand this when we remember that, while corneal astigmatism is "according to the rule," the lenticular astigmatism is due to a rotation of the lens on its vertical axis producing an astigmatism "contrary to the rule," and, of course, neutralizing in its effects. A case which very fully illustrates this condition came under my observation only a few days ago.

A young man of twenty-four, had vision in L. $= \frac{5}{XVIII}$, in R. $= \frac{5}{V}$. Both corneæ were astigmatic, L. 1.25 D. 30°, R. 1.25 D. 20°—that is to say, the axes were both inclined to the right, and not both in or out, as we usually have it when the axes are oblique. No glasses improved vision in the right eye, but a cylinder of — 2. D. axis 125°, very much improved the vision in the left. Skiascopy and the ophthalmoscope gave essentially the same results. This was one of the cases where I considered a paralysis of accommodation necessary for a full and complete examination. As he was in government employ, and could not spend ten days in idleness under atropine, I ordered him hydrobromate of homatropine gr. j, water ʒj, a drop to be put in either eye every fifteen minutes for two hours. At the end of that time all voluntary accommodation was gone. With + 6 he could read No. 1 of Snellen at six inches, but not at seven or five inches. His distant vision in R. with + 0.5 was still $\frac{5}{V}$. In L. V. $= \frac{5}{XXIV,}$ and with $+ 0.5 \bigcirc - 2.25$, 125° $= \frac{5}{IX} +$; skiascopy and ophthalmoscope corroborating. Here we have the same corneal astigmatism in both eyes, but while there is emmetropia in the one, in the other there is an astigmatism almost double that of the cornea in the other. I think that in this case we are justified in considering the accommodation entirely abolished, and the whole phenomena can be beautifully and consistently accounted for on the supposition of a rotation of the lenses symmetrically on their axes—at about 45° inward in both eyes (that is, 45° R., 135° L.). Such a position of the lenses would neutralize the corneal astigmatism of the right eye at 30°, and increase it in the

left at 125°.' It is interesting to note, in this connection, that those congenital dislocations of the lens which are visible, are usually upward and inward.

In another case of a boy of fourteen, examined the same day, there was a corneal astigmatism, "according to the rule," of 1 D. in L. and 1.25 D. in R., but no corresponding demonstrable general astigmatism. V. $= \frac{5}{V}$; no glasses improving. Under atropine, thoroughly used, the only thing developed was a H. of 1 D., but no astigmatism whatever.

Such cases as these are by no means rare, while those of less degree are quite common in my experience, and but for the fact that our allotted time is already spent, many other illustrative examples could be offered. But I think I have already given sufficient to show you that there is a regular astigmatism of the lens which is of sufficient importance to be searched for, and that the lenticular astigmatism due to an oblique position of the lens is probably a more frequent factor in neutralizing corneal astigmatism than a partial contraction of the ciliary muscle.

ORIGINAL ARTICLES.

THE MINERAL SPRINGS OF COLORADO.[1]

BY CHARLES DENISON, M.D.,
OF DENVER, COLORADO.

AMONG the various natural advantages to be found within the borders of the Centennial State, few if any are more abundant and wonderful than the mineral, cold, and thermal springs. This richness is not astonishing to one who is conversant with the remarkable geology of this section. The ore "belts" and ore "shutes," showing different combinations of the precious or base metals; here the salines, there the sulphurets; or again the chlorides, carbonates, or chalybeates, predominating (and sometimes all of them existing together) are but indices of the processes which in the Rocky Mountains have produced a great variety of medicinal waters, through igneous, electrical, or other natural means.

The "carbonates" of Leadville, the sulphurets of the San Juan region or of Clear Creek County, or the chlorides of Custer County, show a marked similarity in their combinations to the neighboring mineral springs. It is claimed that the famous Bassick and Bull Domingo mines in the Wet Mountain valley are but the remains of tremendous thermal springs, where boulders were coated with metals and salts, and the surrounding rocks also became impregnated for considerable distances. And there are many miners who believe the great mother spring or volcano will yet be found which once threw up that large chloride deposit extending over miles in area near Silver Cliff.

[1] Read before the American Climatological Association, June 25, 1889.

The task of describing all the mineral waters of Colorado is impossible at this early stage of Colorado's development, as the data is yet too crude and incomplete. However, the chronicler of a few years hence will have a great advantage, when the complete analyses of Colorado mineral waters, authorized by the last State legislature, shall have been completed.

The writer takes pleasure in referring to Dr. Solly's published description of the "Manitou" mineral waters, and at the same time feels compelled to pass by the wonderful Pagosa, Ouray, Uncompaghre, Tomichi, Wagon Wheel Gap, Canon City, Poncha, Cottonwood, and the hot springs of Middle Park. He will confine himself to a description of four of the groups, chiefly in northern Colorado, which he has personally investigated, namely, Steamboat Springs, the Siloam and Glenwood Springs group, the Seltzer at Springdale, and the thermal waters at Idaho Springs; adding a description of the latter point as a representative mountain health station.

STEAMBOAT SPRINGS, *Routte County.*

One of the most wonderful collections of mineral springs in America is to be found in northwestern Colorado, west of the main range of the Rocky Mountains; along both banks of the Bear, or Indian Yampa River, and above the point where the Elk River joins it from the north.

The town is in its infancy, and the springs are named Steamboat, because of the likeness of one of them to the puffing of a steamboat, with its peculiar rumbling, swishing, and hissing noise. This spring, although cold, is so freighted with gases, that a regular spouting to the height of about three feet is caused through a hole ten inches in diameter in the solid rock.

The analysis of this spring is as follows:[1]

Carbonate of soda	75.24
Oxide of iron	a trace
Sulphate of potassa	8.39
Sulphate of lime	21.64
Sulphate of magnesia	11.76
Chloride of sodium	200.76
Evaporation by calcination.	2.74
Total	320.53
Gases — Sulphuretted hydrogen; Carbonic acid.	

The remarkable fertility of this neighborhood in variety of mineral waters, is instanced by the fact that within forty feet of this gas spring there are three flows of water which give different colored deposits on the grass and stones over which they flow.

There are forty or fifty springs in all, on either

[1] All the analyses are reduced to a like standard, namely, parts of mineral or solid substances in 100,000 of spring water.

side of a limestone and quartzite ridge, running northwest and southeast, the valley of the Bear at this point running east and west.

The springs are at present reached by stage, about 100 miles south from Rawlins, Wyoming, on the U. P. R. R.; 75 miles north from Russell, on the D. & R. G. R. R., and 85 miles northwest from Hot Sulphur Springs, in Middle Park, Colorado, which is 48 miles from Georgetown, on the Colorado Central R. R. The latter route, about 180 miles from Denver, has been the one usually chosen by tourists, but the Russell route just opened is shorter.

It is only a question of time, when some enterprising railroad corporation will extend the iron rails into this valley of the Bear River.[1]

The altitude of the springs is about 6500 feet above sea level, and it is somewhat colder than the same elevation on the eastern slope of the Rocky Mountains. The air is decidedly bracing and very dry, and invalids generally have been known to become robust and healthy by a more or less prolonged stay in this section. It should of course be noted here, that only those most fit for such a life of "roughing it" have thus far gone into the Bear River valley. The springs have been taken up by individuals and are included in the domain of the Steamboat Town Company.

Among the mineral springs, there is one of which it is especially delightful to drink. This is the *Iron Spring*. The water is cold and contains carbonic acid in excess, as well as the iron; so that, while drinking, it tastes much as does freshly-drawn Vichy, and one can imbibe more of it at one time than can be done with any other water of which the writer is acquainted. In 100,000 parts of the Iron Spring water are contained

Oxide of manganese	a trace
Carbonate of iron	38.40
Sulphate of potassa	11.15
Sulphate of soda	39.02
Sulphate of lime	71.86
Sulphate of magnesia	40.79
Chloride of sodium	104.20
Alumina	a trace
Evaporation by calcination	50.58
Organic matter	3.41
Total	359.41
Gases	Sulphuretted hydrogen, Carbonic acid.

Besides being one the best chalybeate waters known, this has been found especially efficacious in dyspepsia.

About half a mile from the main group of springs is the *Bath Spring*. This is a hot spring—temperature 103° F.—which bubbles up in a pool twelve feet in diameter. A bath in this spring is peculiarly delightful, probably in part because of some chemical combination on the surface of the bather's body, which is covered, while in the water, with minute white bubbles.

The analysis of this water is as follows:

Carbonate of lime	23.50
Sulphate of potassium	a trace
Sulphate of soda	9.55
Sulphate of magnesia	10.43
Alumina	a trace
Evaporation by calcination	4.36
Total	47.84
Gases	Phosphoric acid, Silicic acid.

There are two other hot springs in this vicinity, one of which, with a large flow of water, is situated about five miles north of Steamboat Springs proper, and has a temperature of 156° F. This water, and that of several other important members of the group, have not yet been analyzed.

There are two or three cold boiling springs, with large flows of water, decidedly sulphurous in nature.

Then there are various combinations of iron with sulphur. One spring boiling up in a pool thirty feet in diameter, is called the "Milk Spring" because the water is white as milk. This water has a sweetish, salty taste, and cattle seem to like to drink of it. There are two or three other springs which are probably also composed of magnesia either alone, or in combination with iron, is a principal constituent. One of the springs is decidedly saline, the water proving actively purgative if taken in sufficient quantities.

There are pools of mineral water not yet investigated and a cave formed by the deposit from mineral water. This excavation is so filled with gases, that one's lungs immediately become exhausted if he tries to remain there.

Besides all this there is plenty of good drinking water not mineralized; all of which goes to show that Steamboat Springs, because of its natural advantages, is destined to become a very attractive

[1] There are inducements sufficient in the coal, iron and grazing advantages, not to mention one of the most attractive—to the genuine sportsman—summer resorts in the United States; for here, according to the writer's experience, one can catch more trout in an hour, and find larger game in hunting, than in any other portion of Colorado. For instance, during a half day's hunt in "85" after a bear and elk, the latter of which he shot, he saw seventeen deer and three elk, in bunches numbering from one to three, just west of the Elk River. Of course, the numbers are gradually decreasing, but the region is peculiarly adapted to the grazing and haunts of game, as well as for hunting on horseback. The mountains are not abrupt as in the main range, but rise by easy graduations from the beds of the streams to a distance of from three to eight miles away. These hills and valleys in summer are covered with rich grass, which the fortunate possessors of the bottom lands use as pastures, while they cut hay from their ranches to tide over the two or three months of winter, with the deep snow which is characteristic of the upper half of the Bear River valley.

resort, for the tourist and invalid, especially in the summer time.

The analysis of the waters were made by Prof. E. J. Mallett, Jr., formerly of the School of Mines, at Golden, Colorado.

SILOAM SPRINGS, *Garfield County.*

These springs consist of five outflows along the banks of the Grand River, below where the Eagle River empties into that noble stream, and just west of the boundary line of Eagle County. The elevation is about 6000 feet above sea level and they are warm, or hot, being from 94 to 104 or more degrees Fahr., and contain a combination of salines very similar to the waters found at Saratoga.

According to Sir Henry Thompson, the heat intensifies the effect of the medicinal ingredients which such waters contain. This is undoubtedly the fact, for a single glass of this water taken hot is a purgative under ordinary circumstances. This does not appear to be otherwise explained according to the partial analysis of the Bath or Warm Sodium Spring, by Prof. Regis Chauvanet, of the Colorado State School of Mines, unless the effect mentloned be due to the sulphate of lime.

	Parts in 100,000.
Bicarbonate of lime	21.96
Bicarbonate of iron	1.99
Sulphate of lime	65.70
Chloride of sodium	948.42
Chloride of magnesium	21.78
Silica	.40
Total	1060.25

Or 616½ grains in a gallon.

A much larger flow of water has been developed since the above analysis was made—*i. e.*, in the Cave Spring, nearer the head of the Canon of the Grand, about half a mile further down the river than the warm Sodium Spring.

The tunnel or entrance to the cave is about five feet wide, and the flow of water which reaches across the bottom is six inches or more deep, the temperature being about 103° F. This cave is constantly full of warm steam, and the hot water pours from the porous rock by many openings, as in the caves at Glenwood Springs, sixteen miles further down the Grand River.[1]

There is, in other respects, much similarity between these outflows and those at Glenwood.

On the opposite side of the river from the Cave Spring, between an island and the main land, is "The Pool," which gives the town its name of Siloam, after the spring and pool made memorable in Bishop Heber's lines, "By cool Siloam's shady rill," etc. This pool is over one hundred feet in diameter, with mud banks formed largely of the chemical deposits from the large flow of hot mineral water which comes up in its centre. Neither the waters of the Pool, the Cave Springs, or of the Boiling Spring, farther down the river, have yet been analyzed, but they are heavily mineralized, and the latter especially is said to be agreeable though peculiar in taste, and to have a decided effect upon the action of the kidneys, as well as upon the bowels. Though the total flow from Siloam's five principal springs is less than that at Glenwood, yet it is approximated by a good judge to be over ten thousand gallons an hour.

The analysis already given shows a remarkable similarity to the Saratoga group, especially the Eureka, while the total constituents are like the Empire and Congress flows. As alterative, laxative, and diuretic waters, these alkaline saline springs are destined to take a prominent place among the medicinal springs of America. It is the intention of the promoters of the town to improve the springs by adding bathing establishments, and hopes are entertained of having a Sanitarium of considerable proportions built at this point. The Denver and Rio Grande Railroad is completed through the town, and some considerable work has already been done on the opposite side of the river, on the joint roadbed of the Burlington and Union Pacific railroads.

The beautiful valley, in the centre of which are the hot springs, and around which rise magnificent mountains, one above another, till a height of 10,000 to 14,000 feet above sea level is reached, affords many advantages for a health resort.

Among the natural attractions near by are the wonderful Canon of the Grand River, equal in grandeur and sublimity of views to any of Colorado's gorges, and the "Deep Creek" Canon, three miles northeast, crossed by the road leading to "Sweet Water Lake," twelve miles distant. This lake is a most charming body of clear water in which, as well as in all the streams mentioned in this article, are quantities of trout, which can be taken in large numbers by a good fisherman at the right season of the year.[1] Near this lake are some interesting caves.

About nine miles from Siloam to the north, and at an elevation of 9000 feet above sea level, is an area uncovered by snow in the coldest winter, where a cloud of steam exudes from the earth. This is supposed by some to be an escape of gas and steam from the source of the hot springs at Glenwood and Siloam.

In other ways this region about Siloam is wonderful and interesting, not to omit the utility of unlim-

[1] At the entrance to this cave a substantial bath house and across the river the first hotel of Siloam have just been completed.

[1] Around these places—*i. e.*, up in the mountains near "timber line"—a persevering hunter will undoubtedly be rewarded by coming across a deer or antelope, and occasionally a bear, though the chances are more than even that he will say he "has not lost any bear" should he meet a member of the bruin family.

ited amounts of gypsum, limestone, granite, marble, lumber, coal, and carbonate veins containing silver.

THE SELTZER SPRINGS.

These springs are situated at Springdale, Bou'der County, a small mining hamlet, ten miles from Boulder, the county seat, which is the nearest railroad point. There is a post-office and daily mail. Stage leaving Boulder at 1 P.M. daily, also reached by daily stage from Lyons, about the same distance away, on the line of the Denver, Utah & Pacific Railroad. The location is on James Creek, a clear mountain stream, surrounded by wooded mountains, and in the midst of picturesque scenery. Trails and foot-paths lead to the summit of lofty peaks in the vicinity, from which can be had grand views of the snowy range eight to ten miles distant. These points also command sweeping views of the plains to the north, south, and east, spread out like a vast ocean.

The subjoined analysis of the Seltzer Springs by Dr. Jackson, State Assayer of Massachusetts, indicates their value:

Bicarbonate of soda	9.37
Carbonate of lime	74.29
Bicarbonate of magnesia	1.14
Bicarbonate of iron	6.86
Sulphate of soda	184.46
Chloride of sodium	8.51
Silicate of soda	6.86
Iodide and bromide of sodium	2.23
Total	293.72

The formation of the springs is in solid granite. The water flows freely out of the crevices of the rock and is strongly impregnated with carbonic acid gas.

The springs are situated near the edge of the creek. The drinking-water, separate from the mineral spring, is pure and soft and is obtained from wells. The baths are used extensively, with excellent results, in chronic rheumatism, the water being heated artificially.

The climate differs only from the "valley," or plains, in the cooler nights in summer. The mean temperature is slightly below that of Denver—about 47° for the annual average. The attractions of the neighborhood are the mining camps and mines in the immediate vicinity, the walks and rides in all directions presenting varied and picturesque views, and the trout-fishing in the St. Vrain, a few miles distant.

The springs were discovered in the early history of the Territory, and the waters have been used by those living in the vicinity ever since.

There is a small but well-appointed hotel, and several cottages connected, where every convenience and comfort can be had at moderate prices.

The flow of water from the principal spring is about the capacity of a 1-inch pipe, with, say, 1 foot of pressure. The soil is light and gravelly, and there are no stagnant pools, as the swift-running creek supplies a channel for quickly draining off all refuse.

When the analysis is compared with those of the celebrated springs elsewhere (reduced to a uniform standard—*i. e.*, parts in 100,000 of water), its place is well established among such springs as Bethesda, Waukesha; Hot Springs, Arkansas; and Old Source, St. Moritz, Switzerland; Gastein, Austria; Seltzer, Saratoga. The Bethesda, with one-seventh as much salt—solid ingredients—as the Springdale water, must get its superior value, if it has any, from substances the analysis does not mention. We would be inclined to offer the same excuse for the waters of the Hot Springs, Arkansas, and the Gastein, in Austria, except for their silica, if it were not for their great heat, which being natural, is believed to be much more advantageous. The Springdale Seltzer analysis, as a measure of valuable chemicals, seems to be superior, especially in quantity, to all those named, which it decidedly resembles. But the closest analogy is to the waters of the Seltzer Springs, Saratoga, and the Old Source spring, at St. Moritz, Switzerland. The Springdale Seltzer, though weaker than the Saratoga Seltzer in salines, is stronger in iron, which is in the excellent form of the bicarbonate. It resembles the St. Moritz, Switzerland, except it has six times as much sulphate of soda. The additional alterative influence of the silicate of soda and of the iodide and bromide of sodium, which the Springdale water contains, would place it above both the other two mentioned. It is a decided tonic and alterative water. It is alkaline and slightly diuretic, effervescent and agreeable, and is indicated in dyspepsia chiefly, in convalescence from fevers and debilitating diseases, in chlorotic disorders and in anæmic states where iron is needed. The beneficial effects in case of diabetes and in other chronic diseases of the kidneys have been noted by the writer.

IDAHO SPRINGS.

Idaho Springs is one of Colorado's promising mountain towns. It owes its prosperity to the hot medicinal springs which are found there, and after which the town is named; to the climate and natural attractions of the locality, and to the gold and silver mines in the mountains near by. It is thirty-five miles distant from Denver and reached in two hours on the Colorado Central, a narrow-gauge branch of the Union Pacific Railroad, and its elevation above sea level is 7512 feet at the railway station. From the plains, two thousand feet below, up to this point, most of the Clear Creek canon, through which the railroad mounts to this elevation, is a closely shut-in

winding gorge whose precipitous sides furnish a variety of scenery; a constant and pleasurable wonder to one who first makes the journey. Near Idaho Springs, however, the canon widens out into a valley over a mile long, in the centre of which lies the town, a very pretty place as seen from the low hills on the south. It is a clean, well-arranged city of about two thousand inhabitants and five hundred houses, built along the north and south banks of a small stream—the South Clerk Creek.

To the north of the valley, which here runs east and west, the mountains rise more abruptly and higher—thus protecting the town from inclement north winds—while the less precipitous mountains to the south allow a desirable long continuance of sun exposure.

The three hotels of the town, together with a restaurant and several boarding-houses, have entertained an average of about five hundred strangers during the summer months, not to mention many tourist parties which have come up from Denver just for a day's trip. This fact, together with the record of about a thousand baths given at the bath establishment at the springs during the past summer, gives a good idea of the summer popularity of this resort. There is no reason why this record should not extend through the remainder of the year and be trebled during the summer time, when the contemplated improvements of the springs and baths, and suitably attractive hotel accommodations for invalids in winter, are completed.

Those who have the requisite vigor and endurance to accomplish the same, can plan walking, fishing and sight-seeing excursions, which, with the baths and improvised or occasional amusements in town, may help to while away a considerable sojourn in this delightful locality and bracing climate.

THE MINERAL SPRINGS.

The discovery of the *Hot Springs* at Idaho was made in a curious way. There is quite an area of ground near the mouth of Soda Creek where a well sunk ten or twenty feet will reach hot mineral water. In 1859, in the days of the gold excitement, a miner, James Jack, "struck" hot water in a prospect hole, which was afterward enlarged and used as a bathing pool by gulch miners, prospectors, and adventurers. Afterwards, other sources and other kinds of water were discovered near by, but the popularity which these springs have acquired for medicinal virtues are due chiefly to two of the flows, viz.: the warm iron and soda spring, which is called the "Drinking Spring," and the Bath Spring, which is principally used for bathing purposes.

Apart from the main group, and below where Soda Creek empties into Clear Creek, is a cold saline spring, which Dr. Brummond says he has often prescribed for constipation with excellent results, the patients taking two goblets of the water, which is quite palatable, before breakfast and in the evening. There has been no analysis of the water of this last-mentioned spring.

It is estimated that all the hot water flowing from the different sources in the main group, if conducted into a trough a foot wide, would make a stream a foot deep moving as fast as a man walks. This gives an idea of the abundance of the flow. There is evidently hot water enough were it properly collected; and could it be done, the writer suspects other varieties would be discovered. Much as at Steamboat Springs, Colorado, where there is a great variety of mineral water, there seems to be at Idaho Springs a change in the geological formation of the mountain—a vein or ledge breaking out, by means of which these hot currents reach the surface from nature's labyrinth deep down in the earth.

The largest of these flows is from "the Well," which has been sunk twenty-five feet below the surface, and out of which the water is pumped in summer for use in one of the three bathing-houses there. The temperature of this water is 110° F. Another large flow is from the Bath Spring, used at present in the lower and newest of the bath-houses. The analysis of this, made by Dr. I. G. Pohle, of New York, is given below. The temperature is from 103° to 110° F. as the water flows into the bath.

ANALYSIS.

Carbonate of soda	52.81
Carbonate of lime	16.32
Carbonate of magnesia	4.94
Carbonate of iron	7.07
Sulphate of soda	50 34
Sulphate of magnesia	32.09
Chloride of sodium	7.13
Silicate of soda	6.99
Total	177.69

Gas: Carbonic acid.

There is another source near by from which similar water is obtained, but of a higher temperature, 120° F.

Further up the gulch and to the left is the *Drinking Spring*, which is an alkaline chalybeate water of evident value. The deposit from the water, as it flows away from a pool beside a rock and becomes colder, looks like the bicarbonate of iron, which must exist in unusual proportion. The gas that bubbles up with the water is probably carbonic acid, and the temperature of this water is 85° to 90° F. This water is much used for drinking, and has acquired considerable reputation for the relief of dyspepsia and for its salutary action on the kidneys.

Further up the valley and to the left, still more wonderful phases of this mineral spring formation

remain to be described. These are the *Cave* and the *Tunnel Springs*. The former is a warm pool—temp. 100° F.—at the bottom of a considerable excavation in the rock which forms the mountain side. A little house is built close to the entrance of the cave, where the bather can gradually cool off after the bath.

The Tunnel Spring is more remarkable. Here is an excavation directly into the rock at the base of the mountain to the extent of fifty or sixty feet in length, and eight feet wide and high. Partitions are built across this tunnel at twenty and forty feet and at the entrance. In the inner room a bathing pool is constructed large enough for one or two persons. There is quite a large flow of water through this basin, and its temperature is 105° to 110° F. The inner room is filled with an atmosphere about as hot as the water, and also saturated with medicinal vapors. Under these peculiar conditions we have a good imitation of the old Russian bath. The relaxation and cutaneous perspiration possible in this natural steam-vault can be carried to any desired extent, and much caution is needed in again returning to the outside atmosphere. A cold plunge or shower-bath after such treatment would act as an excellent prevention of "taking cold," by closing the pores and fortifying the skin against the sudden change of temperature in coming out of the tunnel.

The opinions of the local physicians as to the curative virtues of the medicinal water should be valuable in this connection. Dr. P. Brummond, as already stated, has often prescribed the lower spring water for constipation. He has also found good results from the use of the "drinking," or iron-soda water, in dyspepsia and in kidney disease (gravel), and in cystitis. The "hot tunnel" baths he has prescribed in conjunction with the internal use of salicylic acid or iodide of potassium for rheumatism, and been much pleased with the effect. He has noted good results likewise from the use of the "bath" spring water for eczema, taken internally as well as used by bathing.

Dr. William B. Hawkins, another resident physician, has kindly furnished the following notes of three patients who have used the waters, and his evidence seems to agree with what we would expect to result from their judicious use in gouty and rheumatic affections:

CASE I.—Mr. A. D., a resident of this place, thirty-seven years of age, inclined to stoutness and possessed of a gouty disposition and heredity, came to me in March, 1888, suffering from the usual symptoms of lithiasis or latent gout. In addition to remedies addressed to his digestive disturbances, I advised the systematic use of the alkaline mineral water internally, in conjunction with frequent alkaline baths (natural hot spring water). All the symptoms were promptly relieved, and though he had been long subject to similar attacks, none have occurred now for nearly a year, the mineral water having been continued quite regularly.

CASE II.—Mr. G. M. B., of St. Louis, came here in June, 1888, suffering from sub-acute rheumatism in both ankle-joints, which rendered locomotion very difficult, painful, and almost impossible. After three or four weeks' use of the hot baths, and the mineral water internally, he returned home greatly improved, being able to walk without the slightest difficulty.

CASE III.—Mr. A. D. J. came here in July, 1888, from Nebraska, a great sufferer from chronic rheumatism, nearly every joint in his body being more or less affected. He "camped out" in the neighborhood of the springs, relying exclusively upon the internal and external use of the alkaline water, and after a residence of about two months went away almost entirely relieved of all his disabling and painful joint symptoms.

In addition to the above-described cases, there are many people at present residents here who enthusiastically ascribe their nearly complete immunity from the recurrent attacks of rheumatism, to which formerly they were subject, to the regular use of our alkaline water.

Mr. Montague, the present owner of the hot springs, has seen several cases of periodical gout relieved in those who have come up to take a course of baths and to drink the water. Of course, the absence from convivial scenes and from over-indulgence, together with the exceedingly bracing atmosphere, are valuable aids to the mineral water in the relief of these cases.

However, the statement as to the cure of gout emphasizes a marked correspondence between Pohle's analysis of the Bath Spring water and that of the "Sprudel," at Carlsbad, in Bohemia, the fame of which for use in gout and kindred affections has become world-wide. The only essential difference between these two flows appears to be that the Carlsbad is hotter (169.5° F.) and it has a stronger element of soda, while Idaho Springs has a very much greater proportion of iron. As compared with the Carlsbad, the Idaho Springs water is less saline and purgative, but more tonic. It is undoubtedly a very valuable alkaline, saline, alterative, and tonic water.

Like Carlsbad, these waters should, and undoubtedly will, gain a reputation for the relief of diabetes, and of gastric catarrh, either alone or associated with disease of the liver. Prof. von Niemeyer especially recommended the Carlsbad waters for gastric catarrh. The writer would recommend the use of the Idaho Springs water for a very common condition, hyperæmia or engorgement of the liver, whether it be active or passive, with the suggestion that should drinking the water not prove laxative enough then in addition a hot sour lemonade be taken on retiring at night or rising in the morning. This plan, with the proper diet and the climbing of hills during the daytime, would be very likely to bring a rebellious liver "to terms." If it did not, and the patient continued to have too constipated bowels, the addition of a teaspoonful of Glauber's salts to

the early morning draught might be efficacious. This last addition would make the water as strong or stronger than the Carlsbad.

Looking for other correspondences among the noted springs abroad, we see a marked similarity between the Idaho Springs water and the Marienbad, situated in Bohemia, twenty-two miles south of Carlsbad. This, however, is a cold spring and very purgative. Otherwise the correspondence between the Idaho and Marienbad is even more marked, because of their chalybeate qualities, than between Idaho and Carlsbad springs.

Of the Marienbad waters a distinguished authority on mineral waters has said, what has also been claimed for the Idaho Springs water, that beside an increase in the excretion of urine, "the secretions of the mucous membranes are increased and perspiration is more free. The appetite and digestion usually improve under their use, and, owing to the presence of carbonic acid and iron, the prolonged use of the water does not prove as debilitating as otherwise would be anticipated."[1]

In the chalybeate qualities there are still more remarkable correspondences between the Idaho and the celebrated St. Moritz Springs in Switzerland.

The writer, when visiting the Maloya Valley, Switzerland, in the summer of '88, was surprised at the reputation the St. Moritz flow had acquired, considering the remarkable simplicity of the analysis (total ingredients, ten grains to the pint—*i. e.*, aside from the carbonate of iron contained). These springs have become the attractive centre of large hotels, where thousands yearly linger to drink the tonic waters. Maybe an American should not allow his wonder to be too demonstrative, because the Arkansas Hot Springs, with one-tenth as much mineral ingredients, has become quite as celebrated, and even the pure water of Waukesha has a continental reputation.

However, the St. Moritz is one of the best of Dr. Walton's group of foreign chalybeate waters—the Schwalbach and Pyrmont, in Germany, the Spa in Belgium, and the St. Moritz, in Switzerland. Nevertheless, the Idaho Springs contain three times as much carbonate of iron, and nearly three times as much carbonate and sulphate of soda as the St. Moritz flow, which latter has also the disadvantage of being a cold spring (49° F.).

The use, therefore, of the "Drinking Spring" water at Idaho Springs for anæmic conditions, chlorosis and convalescence from diseases attended with impoverished blood states, will naturally be suggested to every medical mind.

It will not be difficult for a physician to select a typical case that would be benefited by drinking this spring water, especially in such a bracing climate a mile and a third above sea level. In the opinion of the writer, a typical case would be a chlorotic young woman—probably with constipation and amenorrhœa, deficient muscular tone and lung capacity, feeble assimilation and languid nerves, with or without some gastric catarrh. How often the busy practitioner sees such a case, and wishes the needed iron could be so combined as to relieve and not increase the accompanying constipation. In the Idaho Springs iron water nature has accomplished the desired combination in the sulphate of soda present. The surrounding conditions are also best calculated to give renewed circulation of blood and vigor of muscle.

This water is chalybeate without being constipating; laxative without being depressing; alkaline, yet with an excess of carbonic acid; hot, yet agreeable to the taste.

In the drinking spring is almost an exact imitation of the celebrated Apollinaris Water, with the carbonate of iron, the silicate of soda, and a little sulphate of magnesia added. It can be taken with greater impunity than many simpler waters, because of its peculiar combination, the main effect to guard against being a tendency to congestion of the head from the excessive amount of iron.

If acid dyspepsia, with chronic catarrh of the stomach, is not relieved by its internal use, the addition of a little common salt to that which is drunk after meals may be serviceable.

As a bath the use of the hottest spring water can be recommended for chronic rheumatic swellings, the swelling or stiffness of joints, plethoric or impure blood conditions, especially if associated with any eczemas or chronic skin diseases. Besides in certain chronic diseases peculiar to women, the local use of the hot water at the bath would be invaluable—such as for leucorrhœa, subinvolution, or chronic uterine inflammations.

(To be concluded.)

[1] The Mineral Springs of the United States and Canada, etc. By George E. Walton, M.D. D. Appleton & Co., N. Y.

TWO RARE TUMORS OF THE BREAST.

I. Carcinoma in the Male Breast. II. Abscess simulating Carcinoma in the Female Breast.

BY DUDLEY P. ALLEN, M.D.,
VISITING SURGEON TO LAKESIDE AND CHARITY HOSPITALS; CONSULTING SURGEON TO ST. ALEXIS HOSPITAL, OF CLEVELAND, OHIO.

Two rare cases of diseased mammæ have recently come under my attention.

CASE I. was a carcinoma in the breast of a man, fifty years of age, with good family and personal history. No case of cancer had ever occurred in his family within his knowledge. I saw the man in February, 1889. About one year previously, while bathing, he had scratched his right breast. He put on a red flannel shirt, which caused much smarting

that night. This was the first time he noticed any trouble with the breast. For three months various salves were applied, and later a wash of carbolic acid was used. First the nipple became ulcerated, and the process has gradually extended until there is now a phagedenic ulcer four inches transversely by two and a half inches vertically, invading the region of the right breast. Scattered about the periphery of the ulcerating surface are nodules the size of a small pea and larger, appearing as hard masses on palpation, and many of them covered by reddish integument. This deposit of nodules also forms a line crossing the thorax from the right to the left mamma. The left mamma is enlarged, indurated, and discolored, but not ulcerated. It measures one inch vertically by two and a half inches transversely. The left nipple is retracted, as in a scirrhus. The glands of the left axilla are enlarged, one being the size of a hickory nut. From the ulcerating surface on the right side a line of induration extends under the border of the pectoralis major to the right axilla. By consent of the patient a small piece of tissue was removed from the indurated border of the ulcerating surface. It presented, under the microscope, the most typical appearance of carcinoma.

CASE II. was a chronic abscess of the breast simulating a carcinoma. Mrs. S., æt. forty-three years, has borne ten children. The first eight children had nursed both breasts.

At the birth of the ninth child the right breast gave a little trouble, and the nipple retracted so child could not nurse it. The tenth child, at the time of operating on this case (February 4, 1889), was about two years old, and had nursed on the left breast *twenty-two months*. No attempt had been made to nurse the right breast, since the retracted nipple rendered it impossible. The right breast secreted some milk, however, as was shown by its escaping from the right nipple while the left was being nursed.

In September, 1888, a lump was noticed in the right breast. There were occasional shooting pains in it, but they were infrequent, and there were none of the ordinary signs of any inflammatory disturbance. The increase in size was very gradual. When I saw the case in February, 1889, in company with Dr. A. J. Cook, I could feel in the right breast a tumor about the size of a large hen's egg, situated to the right of the nipple. The nipple was markedly retracted. The mass was dense; there was no redness of the integument, nor tenderness on firm pressure. I had been called to operate upon the case as one of "scirrhus" of the breast, and the appearance seeemed typical of this disease.

Upon carrying my first incision into the mass there escaped several ounces of thick, laudable pus, much to the surprise of all who witnessed the operation. Fortunately, the breast was not damaged by the incision.

Were I to see a similar case, I know of no means of examination which would distinguish it from a carcinoma of the breast with retracting nipple, save an exploratory incision. The fact that the retraction of the nipple occurred so early in the history of the case (viz., while nursing the child before the last) was doubtless not given sufficient weight. This fact was not elicited, however, until after the incision was made.

A CASE OF RATTLESNAKE BITE, SEEN TEN MINUTES AFTER THE ACCIDENT—RECOVERY.

BY W. M. MEMMINGER, M.D.,
OF CHARLESTON, S. C.

As it is not usual for a physician to see a case of this kind so soon after the infliction of the wound, and as the result of my treatment was so satisfactory, I take this opportunity of presenting the case to my colleagues in the profession.

The patient was a colored laborer of about thirty years of age. While engaged in cleaning some brushes away he was struck in the forefinger of the right hand, the fang of the snake entering the side of the finger, at about the middle of the last phalanx. Seeing that it was a rattlesnake which had bitten him he gave a cry for help, and ran toward some of his fellow-laborers, a distance of about fifty yards. By the time he had reached them he fell, in an unconscious condition. One of the men had the presence of mind to put a ligature tightly around the wounded man's arm, above the elbow, and a half pint of whiskey was poured down his throat; he was then brought immediately to my office—the whole time, as well as I can judge, not being ten minutes before he was presented to me.

The arm, by this time, was enormously swollen; whether from the ligature or from the poison, I do not know, but I think from the poison. The patient was completely unconscious; pulse, thirty to the minute; respiration slow; extremities cold; and involuntary evacuation of the bowels. To all appearances there was no hope, and I must say I was somewhat at a loss to know what to do. I made a free incision, down to the bone, through the wound, cutting both vein and artery of the finger; I then applied Esmarch's tourniquet, just below the shoulder. After having applied this, thinking that perhaps it might be well to try to drive as much blood out of the arm as possible, I applied Esmarch's elastic bandage, beginning from below the tourniquet and descending; this seemed to act well and bled the arm very thoroughly.

There are certain facts just here which I think are worthy of mention. The tissues through which I cut were almost black in color, and the blood extracted from this arm failed to coagulate. In all he bled about a quart. I also resorted to a method which I have seen recommended—that is, of injecting into some of the larger veins a solution of ammonia in water 1–3: 20 minims every half hour; this I injected into the median basilic, twice during the first hour and afterward one after each collapse. The next theory I carried out was giving the patient the poison gradually.

In about an hour's time after he was brought in to me he had recovered almost entirely—so much so

that he was able to sit up and talk with his friends. I now tried the process of giving him the poison. I loosened the tourniquet; no sooner had I done this than he fell into an unconscious condition and apparently in as dangerous a state as before. The tourniquet was loosened for, I suppose, not more than three beats of the heart. This alarming and dangerous condition was caused, I presume from the effects of the poison, the effects of the whisky having worn off several times during the day, the man being perfectly sober in the intervals between the periods of collapses, produced by the slackening of the tourniquet. This process I repeated six times within seven hours, the patient rallying each time within an hour. At the end of the seventh hour the tourniquet was removed entirely, the wound dressed with boracic acid and the man removed to his quarters, partially delirious.

He was bitten on Saturday morning, and on Monday morning he walked to my office to have his finger dressed. The hand had a somewhat erysipelatous appearance and pained him considerably, but in no other way did he feel any bad effects.

Erysipelas did not set in, and in a few days he had completely recovered. The snake was killed a few minutes after the accident and proved to be a rattlesnake about two and one-half feet long.

HOSPITAL NOTES.

JEFFERSON MEDICAL COLLEGE.

SERVICE OF J. M. DA COSTA, M.D.

(Reported by E. P. HERSHEY, M.D., Clinical Assistant.)

HYSTERIA WITH PECULIAR SYMPTOMS.

November 22. K. J., æt. seventeen. Three years ago, antedating the beginning of menstruation, began to have peculiar seizures, supposed to be epileptiform. While standing she would suddenly become rigid, fall to the floor, and then have convulsive movements. One year ago, the case was treated as one of epilepsy, and under the bromides the attacks ceased. Four weeks ago she went into a state of seeming unconsciousness, lasting nearly two weeks. To all appearances she was unconscious of her surroundings; at times she became excited, and would make efforts to jump out of the window. She has at no time either bitten her tongue or fallen so as to injure herself. During the past two weeks the nature of the attacks has changed. Perfectly rational, she suddenly stares vacantly into space, the muscles of the face immovable, lips slightly parted, pupils dilated. The face has not lost its color. In a few minutes the head rotates to the left, followed almost instantly by the trunk; convulsive movements of the left hand then occur, followed by relaxation of all the muscles, the eyes close, and the head drops forward. All attempts to arouse her fail. Remaining in this condition for nearly five minutes, her eyes open and become fixed, the head slightly raised, the face assuming a peculiar look of pleasure—a condition of ecstasy. This gives way to an apparent faint, when she soon begins to mutter, at times humming, at others she remonstrates with those about her; she then attempts to escape, but being detained becomes rigid, but does not fall. The attitude assumed is one that makes those about her think she will lose her equilibrium, but she remains rigid. At times she recognizes those about her during the attacks, and almost in an instant she does not recognize her mother; when asked questions there is usually a meaningless smile upon her face, and she talks incoherently.

When the eyes are fixed, the reflexes are normal, and though the pupils are widely dilated they quickly contract when a bright light is brought before them.

Her menses are regular, though scanty. Has some pain during her sickness, but the attacks are not influenced at this period. There is slight tenderness along the lumbar vertebra. Pressure over the ovaries does not influence the attack, nor is there pain in this region. She states that she often has pain commencing in the lumbar vertebræ, going up the spine, and then to the left and right sides of the head. She has always been very emotional, is easily affected, and readily laughs and cries.

In this case there are three possibilities: Hysteria, epilepsy, and hystero-epilepsy. That it is a case of hysteria would appear from the fact that notwithstanding there were convulsions in the early history of the case, she has never had a spell while alone, and has never bitten the tongue. Were it a case of epilepsy, these striking negative results would be absent; and, too, in epilepsy the pupils are very slightly influenced by light, here they act normally. The whole *morale* of this girl shows the case to be one of hysteria rather than one of epilepsy. She is a healthy-looking girl, and has an elegant color. A case, therefore, of neurosis, the symptoms of which make it a curious one.

Treatment: ℞. Zinc. valerinat. gr. ij, four times a day. At night: ℞. Chloral hydrat. gr. x; sodii bromid. gr. xx.

Keep her quiet. See that she lies down three or four times a day. A diet largely of milk, nourishing, and not stimulating. In order to free the menstrual flow:

℞.—Globules of apiol āā gr. v.

Using six in the twenty-four hours before the time and during her sickness, at which time suspend the valerianate of zinc.

Two weeks later the patient was again presented before the clinic. The results of the treatment were striking. Her menses were no longer scant. No seizures from the time she was put under treatment. The question arose as to whether or not the treatment should be continued. In view of the marked improvement it was found advisable to continue it.

One month later the treatment was discontinued, but in a few days the patient stated that she had occasional feelings of approaching attacks, which soon wore off. Up to the present time April 1, 1889, she has had but four seizures, the last being March 15th. The valerianate of zinc is still continued.

MEDICAL PROGRESS.

Albumin in the Normal Urine.—In the discussion on the prognosis of albuminuria, at the last annual meeting of the British Medical Association, reported in the *British Medical Journal* of August 24th, DR. GEORGE JOHNSON said that from the results of numerous and careful obser-

vations, he was convinced that no albumin existed in normal urine—in other words, that albuminuria was always pathological. The most delicate and entirely trustworthy test for minute quantities of albumin is a saturated solution of picric acid, with the subsequent application of heat. Any opalescence resulting from the addition of picric acid, which is increased and not dissolved by heat, is certainly albumin, except in the very rare case of an immediate separation of uric acid in sufficient amount to render the mixture cloudy. In such cases the crystals of uric acid may be seen with the microscope. Picric acid causes no opalescence in normal urine. It does not precipitate mucin, as has sometimes been asserted; but when combined with acetic or citric acid, the mucin which is precipitated by either of these acids is rendered more conspicuous by the yellow picric acid.

The test for albumin which in delicacy comes nearest to picric acid is nitric acid at the bottom of a column of cold urine. Those practitioners who boil the urine before adding nitric acid must often fail to detect a trace of albumin which might readily be detected by nitric acid in the cold urine. A slight trace of albumin is apt to be decomposed by the addition of nitric acid to the boiling urine.

A comparison of the nitric acid and picric acid tests may most satisfactorily be made by gradually diluting a specimen of albuminous urine. At a certain stage of diluting it will be found that while picric acid gives an instantaneous opalescence, the nitric acid test forms an opalescence at the junction of the two liquids only after some minutes. Then, in urine yet further diluted, the picric acid, with the subsequent application of heat, gives a decided indication of albumin which the most careful testing with nitric acid fails to show.

He had so often compared these two tests that he can now tell at once whether a trace of albumin, which is clearly shown by picric acid, is so small that nitric acid either fails to indicate it or it does so only doubtfully after the mixed liquids have been allowed to stand for some minutes.

Another important use of picric acid is in estimating the amount of albumin by Esbach's simple but accurate quantitative process. Again, picric acid is a more delicate and trustworthy test for peptones than Fehling's solution, the precipitated peptones being redissolved by heat below the boiling-point. It is often stated that peptonuria is of common occurrence. As to this, he said that in carefully testing many hundred specimens of urine he had never met with peptones, except in small quantity, associated with an abundance of albumin.

The separation of peptones from albumin is easily effected by passing the boiling mixture of urine and picric acid through a previously warmed filter. The coagulated albumin remains on the filter while the dissolved peptones pass through and are precipitated on cooling.

Once more, the picric acid and potash test for glucose, while it is equal to any other for accuracy of result, surpasses all others by its readiness of application and facility of working. One especial advantage over the copper test is that the presence of albumin in no wise interferes with the action of the picric acid and potash quantitative test for sugar. In several instances he had known the reducing action of uric acid and urates upon Fehling's solution mistaken for an indication of glucose.

The Prognosis of Albuminuria.—DR. JOHNSON, after discussing at length the opinion of various writers upon the subject of the prognosis of albuminuria, draws the following conclusions:

1. The presence of albumin in the urine, though small in amount and occasionally intermittent, is always pathological.

2. The practice of testing the urine in all cases of ailments, even the most trivial—the importance of which I have for many years past insisted upon—has led to the detection of albuminuria in many youths and adolescents, who are especially liable to be exposed to the commonest of its exciting causes, namely, cold and wet and over-fatigue, and who have not lived long enough for the ultimate evil results of a neglected albuminuria to have become developed.

3. The albuminuria, whether intermittent or persistent, of persons apparently in good health has no such special features as to require it to be designated by such misleading terms as "physiological," "functional," "cyclical," and "the albuminuria of adolescents." The last term is especially inappropriate, since the condition is of most common occurrence in both sexes and at all periods of life, from childhood to extreme old age.

4. In almost every instance these cases of albuminuria may, by a careful inquiry, be traced back to some recognized exciting cause.

5. Nearly all cases of acute nephritis pass through the stage of intermittent albuminuria in their progress toward convalescence; and, on the other hand, the majority of cases of intermittent albuminuria may be traced back to a more or less remote attack of acute nephritis.

6. While, on the other hand, intermittent albuminuria—even though it may have existed for years—may be looked upon as a curable condition if only its exciting causes can be ascertained, avoided, and counteracted by suitable dietetic, medicinal, and hygienic means; on the other hand, the neglect of such means may convert an intermittent into a persistent albuminuria; and a persistent albuminuria, although for many years it may be unattended by symptoms of disordered health, ultimately results in a fatal degeneration of the kidneys.

7. Since it is notorious that albumin, even to a very large amount, may exist in the urine of persons who are apparently in perfect health, it is obvious that the urine of every patient, no matter how apparently trivial his ailment, and the urine of every applicant for life assurance, no matter how robust his appearance, should be tested for albumin.

8. For many years past the fact that albumin may be abundantly present at one period of the twenty-four hours, and entirely absent at another has been publicly demonstrated, and ought to be generally known. It is, therefore, necessary to test the urine, not only after rest in bed and before breakfast, but also after food and exercise.—*British Medical Journal*, Aug. 24, 1889.

Treatment of Burns with Iodoform.—DR. SCHIFF, of Vienna, speaks most highly of Dr. Mosetig's method of treating burns with iodoform. Apart from iodoform quickly easing the pain of the burn, it also effects rapid

healing. The blisters should be removed and the wound washed lightly with a tampon of cotton dipped in a 0.5 per cent. solution of salt and water, then several layers of iodoform gauze should be laid on the wound, upon this a piece of rubber, then cotton, and the whole secured with a roller bandage. If the discharge soils the bandage, it and the cotton may be changed, but the iodoform gauze should not be removed until the end of the first week. For burns of the face, Mosetig recommends a salve of iodoform (one to twenty). The face should also be covered with a mask of gutta-percha. Schiff has treated 109 cases of burns in this way; the majority healed quickly; many of them were both severe and extensive. No toxic symptoms were observed.—*Wiener med. Presse*, August 18, 1889.

Antipyrin in Menstrual Colic.—Antipyrin has, of late, been given in cases of uterine colic and cramps, occurring during menstruation, with excellent results. The drug is administered in the form of a clysma in a single thirty-grain dose. The sedative action is observed in about half an hour; in some cases a repetition of the dose is called for in twelve hours. DR. WINDELSCHMIDT has used this treatment in a number of cases, and always with satisfactory results. Usually a slight hypnotic action seemed to be also exerted by the drug. Other unpleasant accompanying symptoms, aside from sweating and slight ischuria, were not observed.—*Münchener med. Wochenschrift*, August 20, 1889.

Suppositories for Endometritis.—TERRIER, in the *Revue Thér. Méd.-Chirurg.*, August 1:

℞.—Powdered iodoform . . . . ℥ijss.
Tragacanth . . . . . grs. viij.
Glycerine } . . . . . q. s.—M.
Distilled water }

For ten suppositories.

These suppositories should be made in the form of crayons, about the size of a nitrate of silver point, such as is used for cauterizing. Resorcin or salol may be used in place of iodoform in the formula, the same quantity being admissible. If, however, bichloride is preferred, the formula should be altered as follows:

℞.—Sublimate of mercury . . . grs. viij.
Powdered chalk . . . . ℥vjss.
Tragacanth . . . . . grs. xxiv.
Glycerine } . . . . . q. s.—M.
Water }

For 50 suppositories.

These suppositories should be placed in the cavity of the uterus after the vagina has been thoroughly washed and disinfected with sublimate solution. A tampon of iodoform gauze may be placed in the vagina.

Treatment of Retention of Urine from Prostatic Enlargement.—In the Medical Section of the last meeting of the British Medical Association, reported in the *British Medical Journal* of August 24th, MR. A. F. MCGILL opened a discussion upon the treatment of retention of urine from prostatic enlargement. He advocated the following propositions—(1) That prostatic enlargements which give rise to urinary symptoms are intra-vesical, and not rectal. (2) That retention is caused by a valve-like action of the intra-vesical prostate, the urethral orifice being closed more or less completely by the contraction of the bladder on its contents. (3) That in many cases self-catheterization is the only treatment required. (4) That when the catheter treatment fails, or is unavailable, more radical measures are necessary. (5) That this treatment, to be effectual, should (*a*) for a time thoroughly drain the bladder, and (*β*) permanently remove the cause of the obstruction. (6) That these two indications are best fulfilled by a supra-pubic rather than by a urethral or perineal operation. The supra-pubic operation is preferable (*a*) because it is more generally applicable, (*b*) because it can be performed with greater precision and completed with greater certainty, (*c*) because it insures complete and most efficient drainage, (*d*) because it is equally safe. Of ten patients upon whom the speaker had operated eight had continued well, only one having required the passage of a catheter, and that only after excessive drinking. In one case, owing to the extreme hardness of the prostate, the operation was unsatisfactorily completed; in another there was temporary relief, with death at the end of ten months.

MR. EDWARD ATKINSON said he had performed supra-pubic prostatectomy in five cases. Of these, one had died, and the remaining four were well—had good control over the bladder, did not require to micturate more than six to ten times in the twenty-four hours, and were enjoying fair comfort.

MR. REGINALD HARRISON referred briefly to some cases of advanced prostatic obstruction which he had treated by perineal prostatotomy, which he thought was specially applicable to those instances where obstruction was the prominent and most distressing symptom. He concluded his observations by a reference to the importance of the early treatment of prostatic enlargement by mechanical means.

MR. BRUCE CLARKE stated that the obstruction was due mainly to two causes: (1) the growth of the prostate into the urethra, and (2) into the bladder; and both of these must be relieved. He had had eleven prostatic cases under his care, in which some form of operation was required. So far his plan of treatment had been to make a perineal incision first, and examine the bladder; if necessary, incise the floor of the prostate; then one could ascertain exactly what needed to be done, and perform a suprapubic operation afterward, if necessary. He had done this in two cases with the best results.

DR. WARD COUSINS said he had performed two operations for prostatic retention and calculus. Both cases were old men laboring under intense suffering. He enucleated some masses around the neck of the bladder, which proved to be cancerous. Both cases were for a time relieved. He though Mr. McGill's operation would be the method practised in the future for cases in which catheterization was impossible from pain and mechanical difficulty. The essential treatment consisted in the timely use of the catheter.

MR. MACEWEN wished to say that after hearing Mr. McGill's paper, seeing his patients in the Leeds Infirmary and the specimens, he had upon this evidence become a convert to the suprapubic removal of the prostate, as it removed the pathological cause of the difficulty; and he would put the operation in practice on the earliest suitable opportunity.

MR. BENNETT MAY agreed that it is the intra-vesical growth which causes the obstruction and retention, and further, when retention is complete and permanent, that it is collar enlargement; with partial retention, but great irritability, a pedunculated middle lobe. He believed that for drainage the suprapubic is inferior to perineal cystotomy, but he regarded formal removal of any portion of the prostate by the perineal route as an impracticable proceeding in most cases. He thought Mr. McGill's operation should be done before the patient is much exhausted. In such cases median perineal drainage might be the more prudent course.

Mr. Jordan Lloyd, Professor Trendelenberg, and others also spoke, after which Mr. McGill replied.

Anthrarobin.—Anthrarobin, a drug which not long ago was looked upon with much favor by dermatologists, is fast losing its initial reputation. At the last meeting of the dermatologists in Berlin, reported in the *Deutsche medicinische Wochenschrift* of August 22d, DR. O. ROSENTHAL brought the subject of the utility of the drug up for discussion. Its condemnation was almost unanimous. True, it does exert a beneficial action in psoriasis, pityriasis, and herpes, but this action is so slight and so very slow that it is usually lost sight of. Then, again, the accompanying symptoms produced by the drug are far from pleasant, especially from a cosmetic point of view, as by its use the nails of the patient assume a violet color, and the hair takes a strikingly red hue. The patient's linen will also be ornamented with deep violet stains.

DR. BEHREND, in the discussion, stood up for the drug, and said its action entirely depended upon the manner in which it was used. Its action is much intensified when used in conjunction with soap. Anthrarobin is tolerated in many cases where chrysarobin is not. Again, anthrarobin never produces dermatitis or conjunctivitis, as in many instances chrysarobin does.

DR. KÖBNER had used anthrarobin in many cases of skin diseases, also in twenty-five cases of psoriasis. His results were far from satisfactory. He considers that the drug can in no way compete with either chrysarobin or pyrogallic acid. In psoriasis its beneficial action was only noticeable when combined with soap, and in all cases the scales had to be removed mechanically. In a few cases of superficial mycosis tonsurans the drug produced tolerably rapid healing, but its use frequently occasioned a burning sensation which lasted for some time, and in one case it even caused exfoliation of the skin. The stains on linen produced by it cannot be removed by even washing with soda, soap, and water.

Treatment of Chronic Catarrh of the Bladder.—DR. L. FREY, in the *Centralbl. für Chirurg.* of August 17th, claims that iodoform is especially suited for the treatment of chronic catarrh of the bladder, on account of its antiseptic, analgesic, and deodorizing properties.

The bladder should first be cleansed by a douche of warm water, and then a tablespoonful of the following, in a pint of warm water, should be injected into it.

℞.—Iodoform	50 parts.
Glycerine	40 "
Distilled water	10 "
Tragacanth	¼ part.—M.

These injections should be repeated every third day. Three or four will usually effect a complete cure.

Dr. Mosetig-Moorhof has treated twenty-three cases in this way, all of which were cured. No symptoms of intoxication from the drug were observed.

Arrack in Diphtheria.—DR. ROUGE, in the *Deutsche med. Wochenschr.*, No. 29, strongly advocates the use of arrack in diphtheria. The local treatment consists merely in washing the mouth with lime-water. The dose of the liquor varies from a half-teaspoonful to one tablespoonful every two hours, according to the age of the patient. Dr. Rouge's intention is always to give a sufficient quantity so that a slight intoxication will be observable at the end of each day. Fever does not contraindicate the use of the liquor. Rouge reports forty successful cases treated in this manner. The duration of the disease was also considerably shortened, being on an average only eight days.

Phosphorus in the Treatment of Rickets.—The use of phosphorus in rickets, so much vaunted by Kassowitz and others a couple of years ago, has not, we believe, found much favor in this country. A very extensive trial of the remedy has recently been concluded by DR. L. B. MANDELSTAM, of Kazan, who publishes the results in *Vratch*. These experiments extended over a period of nearly three years, and the number of patients upon whom the phosphorus was tried was 450, their ages running from three months to four years. Of this number, however, 234 were excluded from the statistics, either because they did not take the phosphorus long enough, or in the proper way, or because the disease in them was not sufficiently pronounced to make the experiment a satisfactory one.

Of the remaining 216 children, 120 were cured, 43 were markedly benefited, in 30 no improvement was noted, and in the remaining 23 the treatment was discontinued on account of some intercurrent disease. The remedy was given dissolved in cod-liver oil, in the proportion of one part to ten thousand of oil, of which a teaspoonful was given once or twice a day. When it was not deemed advisable to give cod-liver oil, the remedy was administered, after the formula of Kassowitz, in a mixture composed of $\frac{1}{100}$th part of phosphorus, 15 parts each of gum arabic and sugar, 30 parts of almond oil, and 40 parts of distilled water. Dose, a teaspoonful once or twice a day. No other remedy was employed, except when diarrhœa was present, and then an attempt was made to cure this before giving the phosphorus.

The following are the conclusions which the author feels himself justified in formulating as a result of these experiments:

1. Clinical observation justifies fully the employment of phosphorus in rickets.

2. Phosphorus acts better, more quickly, and with greater certainty than any other remedies.

3. This drug, when given in small doses, even for long periods of time, is well borne by children, and causes in them no unpleasant effects.

4. Phosphorus is especially efficacious in controlling the nervous manifestations of rickets.

5. Periodical measurements and weighing of the children, as well as observation of the osseous structures, show that the disease is actually arrested in its course

and cured, in the great majority of cases, under the influence of phosphorus.

Another trial of the same remedy was made by Dr. Shabanova, whose report is also printed in *Vratch*. She treated 105 patients, and obtained perfectly satisfactory results in 77. In 22 an improvement was noted, and in 6 cases there was an aggravation of the disease while the treatment was being continued. The first effects of the remedy were seen in an improvement in the nervous symptoms, and later, in favorable cases, a change for the better was seen in the general health, and in the condition of the bones and muscles.—*Medical Record*, August 31, 1889.

Treatment of Dilatation of the Stomach.—The following method of treatment for chronic dilatation of the stomach is advocated by DR. KLEMPERER: The stomach should daily be washed with a small quantity of water, and a most careful diet enforced. As the stomach absorbs little or nothing while in this condition, it is necessary to give food which can easily be absorbed by the intestines. Hydrocarbons in the form of sugar of grapes, and fats in the form of cream, are especially valuable. Bread and butter may also be allowed. This hygienic treatment should be augmented by electricity and massage of the stomach.—*Revue de Thér. Méd.-Chirurg.*, August 1, 1889.

Dressing for the Umbilical Cord.—DR. CULLINGWORTH writes to the *British Medical Record* of August 24th that he has found starch powder to be the best dressing for the cord before its separation. It is far superior even to finely powdered boric acid; for while with the former dressing the cord will fall off in four or five days, with the latter it will frequently not do so for eight days.

Scraping out of Soft Chancres.—DR. OSCAR V. PETERSON, in *Vratch*, says that, in the course of the last eighteen months, he has treated 120 cases of soft chancre by means of scraping out after the following rules: Having cleansed the ulcer and surrounding skin with a corrosive sublimate or carbolic solution, he wipes the parts with a piece of cotton-wool soaked in ether, and then treats the chancroid ulcer with a sharp spoon, exactly in the same way as if it were a lupoid or an ordinary atonic one. The procedure over, he dresses the raw surface with iodoform powder and gauze. To make the operation painless, he previously injects under the skin a two-per cent. solution of hydrochlorate of cocaine. In eight or ten minutes anæsthesia is complete. In simple cases the ulcer cicatrizes, on an average, in 9.9 days. In 6 out of 120 cases healing was complete in three days, and in 25 in five days. In anæmic or alcoholic patients, however, cicatrization is not complete before the twenty-second or even the twenty-fifth day.

The author adds that, in 2,953 cases of soft chancre admitted during the period 1881–'87, the average stay in the hospital amounted to 27.5 days. In 1888, however, when the new method was resorted to, the average figure did not surpass 20.7. The percentage of complicated cases varied in the former category between 50.5 and 70.3, in the latter was equal to 62.1.

As to other methods of treating soft chancres, Dr. Peterson eulogizes painting with pure tincture of iodine, which is said to give best results in small-sized ulcers of recent origin, but sometimes causes local irritation; and excision of the ulcer and adjacent skin, with subsequent application of sutures. The wound heals per primam in three days.

The method, however, is painful, and in some cases impracticable (for instance, when the ulcer is situated on the glans penis).—*Journal of Cutaneous and Genito-Urinary Diseases*, September, 1889.

Cinchonism and Means of Preventing it.—DR. COGLITORE, in the *London Medical Recorder* of August 20th, after enumerating the principal symptoms of poisoning by quinine, says that in cases of toxæmia no good is obtained from various other remedies employed as substitutes for quinine (arsenic, salicin, eucalyptus, etc.). He finds that quinine is always well borne if given with ergotin and opium. This is his formula:

℞.—Sulphate of quinine . . . grs. xij.
Bonjeau's ergotin . . . . " v.
Opium . . . . . gr. j.—M.

Make into three powders, given at intervals of one hour.

Given in this manner, quinine succeeds in the gravest cases, and gives rise to no symptoms of cinchonism.

The Thermo-cautery in Mastoid Periostitis. — DR. E. MÉNIÈRE, in the *Centralblt. für Chirurgie*, advises the use of the thermo-cautery in periostitis of the mastoid process in place of the method of incising the skin, as advocated by Wilde. The affection frequently follows both acute as well as chronic otitis of the middle ear, and will be recognized as a most painful swelling back of the ear. An incision made with the thermo-cautery is superior to the old method of treatment for the following reasons: First, there is no bleeding; second, no anæsthetic is necessary; and third, the danger of infection is avoided. Ménière has successfully treated fifty-six cases in this way, in eleven of which the disease was primary. Should the opening of the mastoid process subsequently be necessary, the wound produced by the thermo-cautery may be enlarged and the bone opened through it.

Regarding the latter operation, RICARD, in the *Gaz. des Hôpitaux*, No. 23, 1889, discards all trephining instruments, and advocates the use of hammer and chisel. He also claims that better results will be obtained if the anterior portion of the process be opened into instead of the posterior. The skin should, therefore, be dissected away from the back toward the front.

Chloralamid.—The new hypnotic chloralamid seems to be still holding its place and keeping up its initial reputation on the Continent at least. DR. J. HAGEMANN, in *Berliner klin. Woch.*, of August 19th, gives a detailed history of fifteen cases in which the drug was used. These included cases of ischias, tabes, neuralgia, hysteria, aortic and mitral insufficiency, aortic aneurism, aortic stenosis, phthisis, anæmia, arthritis, syphilitic brain trouble, and lead poisoning. In almost every instance the drug acted like a charm; in one only, the case of hysteria, was its hypnotic action almost entirely absent; in one or two others its action was variable. Among the points in favor of chloralamid, Hagemann cites the absence of influence upon the circulation, kidneys, and stomach. Also, that in no case was there any symptom of the drug becoming a habit.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE . . . . . $5.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, SEPTEMBER 14, 1889.

HEALING OF ASEPTIC BONE CAVITIES.

As is recognized by every surgeon, the healing of the cavities of greater or less size, left after the removal of tuberculous or osteomyelitic disease of the bones, is generally tedious and often very unsatisfactory. The conditions for healing are less favorable than in almost any other wounds; the walls are rigid and cannot collapse as do those of an abscess, and often the soft tissues cannot come in contact with the floor of the cavity and thus promote a speedier union. Before the introduction of antiseptic and aseptic surgery, operations on the bones were not only attended with a large mortality, but when the patient escaped the more serious complications there was still a long period of suppuration, with its drain upon the system. This has now been changed, in a very great degree, by the careful application of antiseptic principles. It is now quite possible to secure the healing of extensive bone cavities or bone defects in a perfectly smooth manner, without any febrile excitement or a single drop of pus. This healing is effected by the formation of a mass of granulations, which becomes converted into reparative tissue rather than into pus, but at best the process is tedious and defective.

Attempts have been made by different surgeons to procure speedier and more perfect results, and with considerable success. DR. NEUBER, of Kiel, some years ago introduced the method of implantation of skin flaps, after chiselling or gouging the bone sufficiently to allow the soft parts to be brought into contact with the floor of the cavity. These flaps were fastened securely into position with bone nails, and in many cases primary union was effected; but there are several serious objections to the method: 1st. There is unnecessary removal of healthy bone required, in order to allow the implantation of the flaps. 2d. The flaps are liable to slough and leave defects which require a long time to heal; and, 3d. An irregularity in the surface of the limb will be left, which is undesirable. The method, however, is useful, and has been employed considerably.

The attempt has also been made by SCHEDE and others to secure healing under an aseptic moist blood-clot, and exceedingly favorable results have been obtained. The objections to the method are: 1st. It causes an unnecessary loss of blood, which, in some cases, would be dangerous. 2d. It leaves a collection of fluid which forms an admirable culture field for pathogenic microbes. 3d. It transgresses an almost inviolable precept of surgery—that all collections of blood and blood-clots must be removed from wound cavities.

DR. SENN (*The American Journal of the Medical Sciences*, September, 1889) conceived the idea of substituting aseptic and antiseptic decalcified bone-chips for the blod-clot, as they are absorbable, firm, and form a good scaffold upon which the granulations can be supported. With his usual industry he made numerous experiments upon dogs, before applying the method to man. The results of his experimental work proving satisfactory, the procedure was applied to patients with exceedingly favorable results. In operations upon the skull, it was found that a decalcified, aseptic bone-disk, fitted tightly into the trephine opening, not only promptly arrested hemorrhage from the margins of the bone, and formed a means of preventing adhesion between the external parts and the dura mater, but being gradually absorbed, a mass of granulations took its place, and the defect was closed either by bone or by a dense cicatricial tissue. It is recommended that the disk shall have a number of perforations in it, both for the purpose of drainage, and to allow granulations more easily to penetrate it. For the healing of bone cavities, chips of decalcified bone are used, after thorough disinfection of the cavity and the dusting of both the bone chips and the cavity with iodoform. The results claimed are rapid healing under one or two dressings, with entire

restoration of the continuity of the bone. Senn holds that antiseptic decalcified bone is the best substitute for living bone-grafts in the restoration of a loss of substance in bone, and that in the treatment of bone cavities it is preferable to Schede's blood-clot, as it is not only perfectly aseptic, but at the same time also a strongly antiseptic substance. Implantation of a disk or plate of antiseptic decalcified bone into a cranial defect may be relied upon as a hæmostatic measure in arresting bleeding from the vessels of the diploë; it constitutes a good temporary substitute for the lost portions of the cranium; it prevents the direct union of the brain or its envelopes with the pericranium; and, finally, it furnishes the most favorable condition for the production of new bone from the margins, and closure of the remaining defect by a firm and unyielding membrane. The packing of an aseptic bone cavity with chips of antiseptic, decalcified bone guards against unnecessary loss of blood, and exerts a potent influence in the prevention of infection by pus microbes that might have remained upon the surface of the wound or in the tissues. Capillary drainage by an absorbable drain should be established after implantation, for the purpose of preventing the accumulation of more blood in the wound than is necessary to form a temporary cement substance between the bone-chips, and between the contents of the cavity and the surrounding tissues. In the treatment of an aseptic bone cavity by implantation of chips of antiseptic decalcified bone, the packing answers the purpose of an antiseptic tampon and furnishes the best medium for the growth and development of the tissue resulting from the regenerative process initiated by the trauma. Secondary implantation can be successfully practised in the treatment of a suppurating bone cavity after suppuration has ceased, and the cavity can be transformed into the same favorable conditions for healing as an aseptic wound.

LITERARY PIRACY.

OUR attention has just been called to the most glaring example of literary theft that it has ever been our misfortune to be called upon to expose. Our esteemed contemporary, *The Lancet*, in its issues of May 18th and June 22d, contains a lengthy paper on "The History and Use of Anæsthetics in Midwifery. By Frederick W. Allwright, M.D., L.R.C.S.I.," which is taken bodily, in the most barefaced manner, from Dr. J. C. Reeve's chapter on "Anæsthetics in Obstetrics," in the first volume of Hirst's *American System of Obstetrics* (Philadelphia, 1888). Dr. Allwright—he would be more appropriately named Allwrong—has not added a single original sentence to the lengthy paper as it appears in *The Lancet*, although he has gone to the trouble to substitute here and there a synonym, or to invert the arrangement of words. We trust that the editor of *The Lancet*, who has been the innocent victim of this gross piracy, will give it the fullest publicity, so that, the true character of its author being exposed to public gaze in his own country, he will cease to be a source of possible discredit, through his devious methods, to the community in which he lives.

AT Boston, on Tuesday, Wednesday, and Thursday of next week, two of the National Special Societies will hold their annual meetings. The American Gynecological Society will meet at the Institute of Technology, under the presidency of Dr. H. P. C. Wilson, of Baltimore, and the programme contains a large number of most attractive titles.

The American Orthopedic Association will meet in the adjacent building of the Natural History Society, under the presidency of Dr. E. H. Bradford, of Boston, who, on taking the chair, will deliver an address on "American Orthopedics." A number of papers are on the programme, and on Wednesday there will be a very full discussion of the treatment of hip-disease, with a view to formulating the opinions of the members.

THE Southern Surgical and Gynecological Association will meet at Nashville, on November 12th, 13th, and 14th, and has issued a very full preliminary programme and a general invitation to the profession to attend the sessions. Dr. Hunter McGuire, of Richmond, is President for the year.

THE American Public Health Association will hold its next annual meeting at Brooklyn, N. Y., October 22, 23, 24, and 25, 1889. This Association comprises over eight hundred members, all devoted, officially or otherwise, to its declared purpose—the advancement of sanitary science and the promotion of organizations and measures for the practical application of public hygiene.

With the hope of still further promoting its objects, it is proposed, at the forthcoming meeting, to provide an exhibition of everything available adapted

to the promotion of health. The exhibits will be classified under nine divisions, as follows: the dwelling, schools and education, factories and workshops, clothing and dress, food, sanitary engineering, public health administration in cities and towns, the laboratory, Red Cross.

The Exhibition will be held in the hall at the northwest corner of Fulton and Pineapple Streets, one block from the Brooklyn Institute, where the sessions of the Association will be held. It will be opened to the public without charge on October 22d, at 1 P. M., and will continue open until December 1st.

Applications for space may be made to any member of the Committee on Exhibits, accompanied with details as to name and character of article proposed, space required, etc.

At the close of the Exhibition the Association will award diplomas to exhibitors of specially meritorious articles based upon the judgment of experts.

AN Army Medical Board will be convened in New York City, on October 1, 1889, for the examination of such persons as may be properly invited to present themselves before it as candidates for appointment in the Medical Corps of the Army. Application for an invitation should be addressed to the Secretary of War, stating date and place of birth, place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character, and moral habits; testimonials as to professional standing from the professors of the medical college from which the applicant graduated, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the Board.

Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington. There are at present nine vacancies in the Medical Corps in the grade of Assistant Surgeon.

DR. JOHN T. BANKS, of Dublin, has just been made a Knight Commander of the Bath, Civil Division, and, therefore, becomes Sir John Banks, K.C.B. Sir John is Physician in Ordinary to the Queen in Ireland, and Regius Professor of Medicine in the University of Dublin.

THE Asylum for the Insane in Newcastle County, Delaware, will presently, by purchase, become a State institution. Dr. D. A. Harrison, who has been the resident physician at the St. Johnsland Branch of the King's County Lunatic Asylum, has been invited to become the Medical Superintendent.

IN Belgium, all passenger trains are required by law to have a box of surgical appliances, called a *boite de secours*, containing many of the articles that are first called for in emergencies; a few short and plainly printed explanations accompany each package. In this land of magnificent distances, the indications for provisions against accident would seem much stronger than in a compact little kingdom like Belgium.

THE British profession has suffered another severe loss in the death of DR. SAMUEL O. HABERSHON, which occurred at his residence in London, on the 22d ult., aged sixty-four years. He succumbed to gastric disease accompanied by hæmatemesis—one of a class of affections which he did so much to elucidate. He was well known in this country by his works on the *Diseases of the Alimentary Canal*, which passed through three editions; *On Diseases of the Stomach, the Varieties of Dyspepsia; On Some Diseases of the Liver;* and *On the Pathology of the Pneumogastric Nerve*. He was a careful and painstaking observer, possessed of extensive practical knowledge; to these qualities were added high principle, rectitude of conduct, and sterling friendship, which gained for him honor and respect throughout a long career.

SOCIETY PROCEEDINGS.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Stated Meeting, March 15, 1889.

THE PRESIDENT, CHARLES T. PARKES, M.D., IN THE CHAIR.

(Continued from page 275)

DR. BAYARD HOLMES made some remarks

ON THE RELATION OF BACTERIA TO PUERPERAL ECLAMPSIA.

It is well known that the subcutaneous injection of the urine of the healthy does not result in symptoms of uræmic poisoning, while these symptoms are exactly simulated by the injection of nephritic urine. The demonstration of acute nephritis in fatal cases of puerperal uræmic convulsions is not wanting. The bacterial origin of many other cases of acute nephritis is most emphatically de-

monstrated (Babes: *Bact. untersuch u. septische Processe*, etc., Leipzig, 1869). Bacteria have been demonstrated in some cases of uræmia. On no other supposition or theory have uræmic convulsions been satisfactorily explained. A toxæmia is conceded by all to be the prime condition of the disease. The normal constituents of the urine do not produce this toxæmia; the products of nephritic urine do produce it. Nephritis is usually, if not always, present. This nephritis is sometimes, if not always, due to bacterial thrombosis or embolism. This is the only adequate cause which has up to the present time been demonstrated in any case. It is in perfect accord with the origin of nephritis under other circumstances.

As there must in all cases be a point of entrance of the bacteria and diminished local resistance, we may be asked to go a step further and demonstrate these. The point of entrance is probably the intestinal tract. The low state of vitality which is manifest in many pregnant women, living after the manner dictated by modern civilization, results in such a low state of general resistance that teeth are invaded and abscesses appear elsewhere. Mechanical constipation produces in the intestinal tract points of arrested circulation or pressure atrophy where invasion takes place into the lymphatics of the mesentery. These bacteria do not need to be pathogenic under ordinary circumstances. They circulate freely in the blood until they come to the kidneys and other organs, where mechanical capillary stasis is present from the pressure of the enlarged uterus, assisted, perhaps, by improper dress. Under such circumstances, otherwise harmless saprophytic bacteria multiply in the non-resisting but still living tissues of the kidney, and the products of their growth produce coagulation-necrosis and all the less marked appearances of nephritis. The extent of these changes need not correspond to the severity of the symptoms. In case the infection produces a very toxic ptomaine, the lesion may be only just enough to prevent its rapid elimination; while, in case the ptomaine is less toxic, the symptoms may be trivial until the suppression of urine is almost complete.

DR. DANIEL T. NELSON then spoke on the

DIAGNOSIS AND PROGNOSIS OF PUERPERAL ECLAMPSIA.

Puerperal eclampsia is an acute epilepsy in a pregnant woman, due to an acute anæmia, rarely a hyperæmia, of the brain, produced by poisons circulating in the blood, such as urea, cholesterin, and the like, produced by defective excretion by the kidneys, intestines, and skin. The disease occurs more frequently in first pregnancies. The pregnant uterus pressing upon the ureters tends to narrow their calibre and prevent the discharge of urine into the bladder; or the tissues about the uterus are unyielding, elongating the ureters as the uterus grows, and so preventing the flow of urine; and, in a reflex way, the pressure of the uterus upon sensitive nerves and ganglia in the pelvis, and perhaps from morbid conditions in the uterus and ovaries, acting directly upon the brain, especially the medulla and pons, all the reflex centres being normally exalted in their sensitiveness during pregnancy to facilitate the ordinary processes of nutrition.

The disease is more frequent in irritable and highly sensitive organizations, and in those of corpulent habit, for, in such, excretion is not as thoroughly performed as in others. Sudden suppression of the action of the skin, too, is not an infrequent cause of the disease, causing substances of a poisonous nature to be retained in the blood which would otherwise be thrown off. Puerperal eclampsia, then, is not properly a disease, but rather a symptom of diseased conditions—particularly of the excreting organs.

With this brief description of the disease, the diagnosis is usually easy. When fully developed, the disease is not likely to be confounded with any other, except true or chronic epilepsy. The history of the case and the fact of pregnancy will easily distinguish puerperal eclampsia. Convulsions arising from disease of the nervous centres are likely to be local, affecting only the portions of the body supplied by these centres. Diseases of the meninges of the brain or spinal cord, producing convulsions, are likely to be attended with pain, fever, and irregular nervous disturbances, which readily point to the location of the disease. The determination of whether the eclampsia is due to acute or chronic disease of the kidneys is of little moment in diagnosis, but is of great importance in the prognosis of the case.

The most important diagnostic symptoms for the physician to note and rightly interpret, are the various nervous disturbances, such as severe headache, dizziness, persistent nausea and vomiting, diarrhœa coming on suddenly and watery in character, insomnia, special senses disordered—as dimness of vision, spots floating before the eyes, ringing in the ears, disagreeable taste and smell—disturbance of motor nerves, irregular spasms of voluntary and involuntary muscles, reflexes unusually active.

Œdema, general or local, temporary or continuing, should always attract attention to the condition of the excretions, and examinations of the urine be made regularly and frequently. Defective excretion by the bowels and skin should likewise be noticed and corrected.

Poisoning by lead, arsenic, or the preparations of mercury, is to be considered, but the history of the case is likely to eliminate these readily.

The examination of the urine is of the greatest importance to determine the presence or not of albumin and the amount of urea excreted.

The intelligent and observing physician is likely to detect readily the premonitory symptoms if he has the opportunity to look for them; but, unfortunately, he is usually first called only after the first spasm has occurred, and when the diagnosis is already made.

This is a disease, surely, in which prevention is the best cure. The prognosis is always grave, and can only be fully determined when the extent of the lesions in vital organs is known, and the rapidity with which the excreting organs are carrying off the poisonous substances. The more frequent the convulsions the longer they continue, and the greater their severity the more serious is the prognosis. The continuance, after delivery, of serious organic disease of the kidneys and lesion of important structures in the brain as the result of the convulsions, will complicate the ultimate recovery and render the prognosis uncertain. The diminishing frequency and severity of the spasms, with the free secretion of urine, with urea increasing and albumin decreasing, and a subsidence of the nervous disturbances, will enable us to hope for a speedy and complete recovery and no return in subsequent pregnancies.

DR. EDMUND J. DOERING then spoke on the

PROPHYLAXIS OF PUERPERAL ECLAMPSIA.

Albuminuria during pregnancy may not cause puerperal eclampsia, and eclampsia may occur without a renal lesion, but the fact remains that the danger of puerperal eclampsia is manifoldly increased when a pregnant woman suffers from renal insufficiency, whether the same be organic in character or due to mechanical interference with the renal circulation. It is our duty then to examine carefully from time to time the urine of every pregnant woman. It is unfortunately true that in the majority of cases of pregnancy the urine is never examined. It is also true that in the majority of cases in which the urine is examined, the heat or nitric acid tests constitute the so-called "urinary analysis." The fact seems to be utterly ignored that the urine may be and often is entirely free from albumin and still indicates the existence of a serious renal lesion. We have not done our duty to our patient, particularly if she be a primipara, till we have determined the exact amount of urine secreted in twenty-four hours, and ascertained the actual specific gravity, so as to know the amount of solids passed, together with a careful chemical and microscopical analysis of a mixed sample. Occasional faint traces of albumin occur in a large percentage of pregnant women, and is of no special significance provided the quantity and specific gravity of the urine remain normal. But the persistence of albumin or the presence of casts with or without albumin, or a diminished amount of solids passed in twenty-four hours, indicates the necessity of prompt prophylactic treatment to ward off eclampsia.

The patient should be clad in woollen garments. Extra precautions should be taken to prevent chilling of the body by exposure to cold or wet. The diet should consist principally, if not entirely, of milk, which can be consumed in quantity varying from two to four quarts per diem. Fruit and fish may be permitted, also farinaceous articles of food and some vegetables. Meats are to be used sparingly, if at all; moderate exercise may be advised. The therapeutic indications are, of course, to keep up a free action of the skin, bowels, and kidneys. Warm baths should be regularly employed. The bowels should be moved daily, and an excellent laxative for this purpose is cream of tartar in tablepoonful doses every morning. Compound jalap powder has also a favorable action. In anæmic subjects iron in the form of Basham's mixture given several times daily will be of decided benefit, being tonic, diuretic, and diaphoretic in its action. Infusion of digitalis, in combination with acetate, citrate, or bitartrate of potassium, is also an excellent remedy. The patient should be advised to partake freely of fluids, and Vichy, Buffalo Lithia, and Londonderry Lithia waters are specially indicated. If there is great nervous irritability, rectal injections of chloral at night will be of great service. Finally, if we have exhausted all these measures and the symptoms become worse, the dropsy increases, or the central nervous system becomes involved, the induction of premature labor may have to be seriously considered or become absolutely necessary.

DR. CHARLES WARRINGTON EARLE then spoke on

THE TREATMENT OF PUERPERAL ECLAMPSIA.

Notwithstanding everything which has been suggested in the way of prevention and treatment during the past twenty years, puerperal eclampsia still remains the *bête noir* of obstetrics.

According to many of the older teachers, one-half of the patients attacked with the disease died; and in all the cases which Fordyce Barker could collect up to 1855, thirty-two per cent. occurring before and during labor, and twenty-two per cent. of those after delivery, ended fatally. In this gentleman's practice to 1874, the mortality had diminished to fourteen per cent. Any treatment decided upon must necessarily be varied according as the treatment is administered to one early in pregnancy, during parturition, or after delivery.

The means for treating this terrible condition may be ranged under the following headings:

Evacuants and Detergents.
Nerve Sedatives and Anodynes.
Anæsthetics.
Bleeding.
Operative Measures.

The remedy indicated, or the procedure which offers the best result, differs according to the time of the eclamptic attack. The treatment, then, whatever it is to be, should be considered during the following periods:

Before, during, and following labor.

Whatever the time may be, however, or what plan of treatment it is proposed to inaugurate, it goes without saying that nothing of an exciting nature which can be avoided should be used; that the surroundings should be such that good air and freedom from incumbrances as regards clothing, etc., are insured. If vaginal examinations are objectionable to her, no more than simply enough to acquaint ourselves with the absolute progress of the dilatation of the os should be made. Indeed, every cause which may produce worry on the part of our patient must be avoided.

We must remember that, however well demonstrated the uræmic theory may be to us, there have been during all times a goodly number who believe that puerperal eclampsia is a neurosis, and that any reflex irritation of the spinal system is liable to exaggerate the convulsions.

TREATMENT DURING EARLY PREGNANCY.

Sometimes the attack has been expected; for while exceptionally it takes place without any premonitory symptoms, usually there is œdema, or a terrible neuralgia, or a condition of the nervous system that has caused the experienced accoucheur to expect it. The patient has had preventive treatment. It does not suffice; the convulsion is on. We must now shape our treatment for this case with the knowledge that a single convulsion may cause the death of a patient, and that it is the rule that usually in two days either a cure is effected or a serious complication makes its appearance which will prove fatal.

As rapidly as possible these things should be done: A little chloroform given; the patient put in a hot bath; and a non-irritating cathartic—one which will produce a large, watery stool—administered. Whatever procedure may be adopted later in the case, it appears to me that the foregoing treatment is plain. Of course, as adjuvants, a hypodermatic of morphia may be given and a dose of chloral, either by mouth or rectum. The question will also arise at once as regards the expediency of using pilocarpine as an aid in the elimination by the

skin of retained excrementitious matters. The value of this remedy will be discussed later.

More than a passing notice should be given to the hot baths. They are extensively used in many of the largest obstetrical hospitals. "The patient is placed in a bath-tub filled with water at a temperature slightly above 99° F. The tub is then covered with a heavy blanket, leaving the face free, and the temperature is gradually elevated to 110° or 112° F. She remains in the bath thirty minutes. A towel wrung out of ice-water and placed upon the head relieves any distressing cephalic sensations. While in the bath the patient drinks large quantities of water. Upon emerging from the bath she is covered with a warm sheet and enveloped in an upper and lower layer of thick blankets, so that only the face is exposed. Within a very few minutes free perspiration is observed. The sweating is continued for two or three hours. According to the gravity of the case, the hot-water bath may be repeated once daily for an indefinite period. The relief of all threatening symptoms under this simple plan of treatment alone is surprising. Sometimes the hot-water bath acts as an efficient excitant of uterine contractions, and premature labor is induced."

Concerning the usefulness of chloroform and chloral, there is no doubt. The administration of both have their opponents, but in the speaker's judgment they are exceedingly useful.

Some of the most brilliant recoveries in the literature have come about from hypodermatics of morphia, rectal administration of chloral, aud the inhalation of chloroform. He should not fail to suggest, even in a case where the convulsions are occurring thus early in pregnancy, the propriety of venesection.

If the convulsion persist for a long time or if the attacks come frequently, the question of the induction of labor would suggest itself even thus early. This, however, is a subject concerning which authorities do not by any means agree. The question comes fairly before us early in pregnancy, or any time before labor commences with the os not dilated. Are we justified in attempting an operation the irritation of which may possibly produce a convulsion, and the completion of which may not cause a suspension of the attack for which the operation is commenced?

The speaker ranged himself with those who would consider the propriety and justifiableness of carefully—while meeting all therapeutic indications—evacuating the uterus of its contents.

TREATMENT OF ECLAMPSIA DURING LABOR.

Some of the factors entering into the treatment of convulsions during pregnancy or before full term and which are not fully agreed upon by the profession, do not engage our attention at this time; for instance, the induction of labor, either in the interest of the mother or child. Labor has already commenced; the convulsion is present. To him there is no question as to the propriety of hastening it (labor) by every means possible, and the possibility of producing a convulsion by artificially dilating the cervix is so small that it need not be entertained.

In a considerable number of cases which he had collected from the journals published during the last two or three years, and which do not enter into any of the tables published in the text-books, there are some data favoring venesection at the time. Indeed, Swayne says that in thirty-four cases occurring in his practice bleeding, anæsthetics, and delivery—in the order named—have given the best results. James Murphy (*Lancet*, 1886), however, in the treatment of five cases with pilocarpine as the principal remedy, aided by other adjuvants, has saved all his patients. His plan is to inject subcutaneously from one-fourth to one-third grain of this drug every six hours, and his results are certainly remarkable. In one of his cases thirty-three convulsions occurred during the seventh month, but after the use of the pilocarpine premature labor was averted and a healthy child born at term.

Returning, however, to consider bleeding, it should be said, according to Kucher, that this procedure has been entirely abandoned in the Vienna clinic, and the same author says it is very doubtful whether it ever has any beneficial effect whatever. In fifty-two cases, upon which he bases his paper, only seven were fatal. This is an excellent showing when we consider that the mortality was formerly twenty to thirty per cent. They depend in the Vienna hospitals upon diuretics, diaphoretics, and cathartics. It is also believed that the indication is to expedite labor by all reasonable means, but that too active interference is more dangerous than the eclampsia.

The use of veratrum viride, since the days of Fordyce Barker, has had its advocates, and more recently, in a discussion which took place at the Ninth International Medical Congress, it found a considerable number of advocates. Dr. Jewett, of Brooklyn, in an experience of twenty-six cases, seems to show that in veratrum viride, if given early, we have a well-nigh certain means to prevent death from puerperal eclampsia. Some one has said if the pulse be kept at 60 by veratrum no convulsion can take place. Dr. Jewett gives the drug hypodermatically, and keeps the patient quiet and in the lying position.

Breus has had remarkable results from the hot pack—seventeen cases and only two deaths. It is claimed for this treatment that it does not induce abortion or premature labor. Patients are immersed in the hot bath, and its action continued by the hot pack in blankets. In many cases the results are not as good as they might be, from the fact that the details of treatment are not fully and faithfully carried out.

If chloroform is used it should be continuous and its effect profound. If chloral is to be used, and cannot be given by mouth, thirty or forty grains should be given by rectum, and repeated in twenty minutes, if necessary.

With the present light on the subject, it appears that for convulsions at full term the hot bath, anæsthetics, and a termination of labor as rapidly as can be done without injury to the soft parts, is the treatment for to-day

FOR CONVULSIONS AFTER DELIVERY.

Here factors are wanting which were present while the woman was in labor. The uterus has been emptied of its contents, but the convulsions continue. The induction of labor or rapid delivery by version or forceps cannot now be considered. The indications are to control the eclamptic attack with an anæsthetic, and to eliminate with all rapidity by the skin, bowels, and kidneys. In addition to the hot bath, we now have the pilocarpine, aided by what seems to be the best cathartic—elaterium. To produce the full effect of the last-named drug, we should have at our command as potent a hypodermatic

tablet as we have of pilocarpine or morphia. This is particularly true for cases which cannot swallow.

To sum up, then, we have:

1. For convulsions before delivery: The hot bath, morphia and pilocarpine hypodermatically, chloral and bromide of potassium by mouth or rectum; veratrum viride to reduce heart's action and lower arterial tension; possibly bleeding; the induction of labor.

2. For convulsions during labor: The hot bath, morphia, chloral, anæsthetics; a rapid delivery with all precautions.

3. For convulsions after labor: Control eclampsia by anæsthetics, and rapid elimination by all the emunctories.

(To be concluded.)

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, April 19, 1889.

A. B. JUDSON, M.D., CHAIRMAN.

DR. V. P. GIBNEY presented a patient, a girl fourteen years old, on whom he had operated for

DOUBLE PSOAS ABSCESS FOLLOWING POTT'S DISEASE

of nine years' duration. The carious vertebræ were evidently consolidated, when last November abscesses were discovered, and the patient was brought under treatment. On the right side the tumor was incised in Scarpa's space, and long forceps were passed under Poupart's ligament through the iliac fossa and into the lumbar region, and a counter-opening was made on the forceps along the border of the erector spinæ muscle. Pieces of bone escaped with the pus. The cavity was curetted and the bone scraped gently. With antiseptic dressing and injections of carbolic acid solution 1:40, and one per cent. creolin solution, both wounds closed in a month. The left side was then operated on by simple incision and drainage. Large quantities of bone detritus were scooped out with the finger. A sinus still remains on the left side from which a piece of bone is occasionally discharged.

The case was exhibited as showing the advantage of Owen's method over attacking simply the sac and not the whole suppurating track.

Dr. Gibney believed it would have been better to treat both sides according to Owen's method; but in general he doubted the propriety of doing this operation during exfoliation, which would necessitate a subsequent operation. It is also important that the patient should be in a pretty good condition.

DR. R. H. SAYRE had used injections of peroxide of hydrogen in large abscess cavities, with better results than from carbolic, or bichloride, or boro-salicylic solutions.

DR. GIBNEY said that a similar experience had been reported by Dr. Vance.

DR. JUDSON thought an objection to operating on these cases was that for the natural incarceration of the pus and detritus we substituted an artificial opening, necessitating antisepsis to hasten cicatrization. If these accumulations are doing no harm, it is better to leave them for removal by natural processes; and if in due time they perforate the skin, the general and local conditions are ready to promote evacuation and speedy cicatrization.

DR. J. A. WYETH said that the operation is indicated when large abscesses are situated on exposed parts of the body, and liable to injury and subsequent septic complications. He recalled the case of a woman who, thirteen years after being cured of Pott's disease, slipped and fell on a large gluteal abscess. The accident speedily gave ri e to symptoms of sepsis, with high febrile movements, and several operations under ether were necessary for the removal of bone detritus, which was spread through the gluteal muscles. The patient ran great risks, but finally recovered. He had had other similar cases. A psoas abscess behind the peritoneum causing no trouble should be left alone, but one pointing in the thigh, back, or other exposed situation should be operated upon. as the danger of the operation is almost *nil*.

DR. N. M. SHAFFER was reminded of the history of a patient with Pott's disease and an abscess occupying the gluteal region and the anterior part of the thigh. The child fell, striking the gluteal tumor. The immediate symptoms were alarming, but without the adoption of any special treatment, the accident resulted in the entire disappearance of the abscess. If there were any means of determining with certainty when an abscess from Pott's disease contains bony detritus, it would be preferable to operate; but while spondylitis is still active, it is better to postpone operation as long as possible. He recalled a case of Pott's disease and hip-joint disease which he had been watching for several years, where spiculæ of bone as large as the end of the finger were expelled in a sudden and violent attack of coughing. The bone was undoubtedly from the cancellous structure of the sixth or seventh cervical vertebra. The patient was relieved at once, and physical examination showed that very little trouble had been caused by the entrance of the bone through the lung-tissue into the bronchial tubes.

KNOCK-KNEE—CLUBFOOT—DEFORMITY FOLLOWING HIP-DISEASE.

DR. WYETH related two cases in which he had corrected in- and out-knee in the same patient by double osteotomies. The patients were three and a half and four years old respectively. Both were discharged entirely relieved. Strict antisepsis was followed and the limbs were dressed in plaster-of-Paris in a position of over-correction. He prefers MacCormac's incision on the outer side and just above the capsule, since the saphena vein and anastomatica magna artery are not endangered, as in Macewen's operation on the inner aspect of the thigh. He also briefly related three cases in which patients, aged thirteen, eighteen, and twenty-six years respectively, had been relieved of the deformity following hip-disease, and restored to good locomotion by operations on the femur. The method pursued was Gant's osteotomy below the lesser trochanter. The after-treatment had been Buck's extension and Hamilton's long splint. In one of the patients there had been double hip disease. Two months after the left femur had been operated on the right was operated on; and four months after the date of the first operation the patient was discharged cured, with good locomotion.

He also related two cases in which congenital talipes equino-varus of the most exaggerated type had been corrected with good recovery, and with the feet in excellent shape. Tenotomy of the tendo-Achillis, tibialis anticus,

and tibialis posticus was first done; the first two subcutaneously, and the last by open incision, the tendon being dissociated from that of the flexor digitorum, and divided on an aneurism needle. The operation was completed by an osteotomy as follows: An incision was made on the outer side of the dorsum, exactly over the point of greatest convexity; the tissues were lifted from the tarsus by an elevator, and a conical section including portions of the calcaneous, astragalus, cuboid, and scaphoid was removed. The rule should be to remove all parts which prevent replacement of the foot. The foot being brought into normal position by eversion and rotation, aseptic dressing and plaster-of-Paris completed the treatment, the result of which was excellent.

DR. GIBNEY said that the anatomical point raised in the paper concerning supra-condyloid osteotomies certainly commends to us the operation of MacCormac. Although in- and out-knee in the same subject is rare, he had seen many instances of multiple deformity among Bohemians and Italians. He had recently done a sextuple osteotomy at one sitting, and is treating an ununited fracture of the right tibia, all the others having united.

DR. JUDSON thought that in congenital talipes the reduction of the deformity by mechanical or operative means is easy; but that is a small part of the necessary treatment. So long as the patient is growing, he must be under occasional observation, and, if necessary, made to wear for a few months, at intervals of two or three years, a brace fitted to the present needs, in order to prevent threatened relapses. In the deformities of the knee, there is especial reason for preferring mechanical means of correction, because here we have the advantage of the leverage found in the tibia and femur; while in clubfoot, there is only the tibia on one side, and, on the other, the short and many-jointed foot.

DR. H. L. TAYLOR said that late observation of the results of treatment is of especial importance in orthopædic practice. If surgeons and orthopædists would report the condition of patients five, ten, or more years after dismissal, a more intelligent choice of methods could be made.

DR. SHAFFER said that his experience with mechanical appliances in the treatment of talipes, leads him to think that many severe operations are performed on patients who could be better treated by traction. He recalled a case in which there was confirmed equino-varus, although three or four tenotomies, and five or six osteotomies had been performed. He had applied the "external lateral stretcher" and the patient is now walking on the flat of the foot. He referred to the interesting question whether osteotomy is advisable when there is motion in the hip-joint. In a patient on whom Dr. W. T. Bull had operated, some motion was found after etherization. The reduction of the deformity by osteotomy had been followed by persistent traction with the hip-splint; and good position and slight motion had both been retained.

DR. GIBNEY believed that the presence of motion is not a contra-indication to the operation. About six months ago, he had performed Gant's operation for a right-angled deformity. The flexion had been reduced from 90 degrees to 15 degrees, and the limb was retained at 15 degrees of flexion by a traction apparatus for three or four months, when it was removed and the patient allowed to walk about with a high shoe. After about six weeks, the flexion had increased to 25 or 30 degrees. Traction was re-applied, and the limb is being again brought down. He recognized the necessity of protective apparatus in order to retain or increase the result secured by operation.

DR. WYETH had operated in several cases where there was motion, and had refused to do it in others. In a patient whom he had seen with Dr. L. A. Sayre, there was considerable motion, and he had done a tenotomy for temporary relief, postponing osteotomy.

DR. R. H. SAYRE said that in the case referred to, improvement had followed the tenotomy, but an apparatus is necessary to prevent a return of deformity. He thought that in some cases sufficient reduction of the flexion might be brought about by section of the psoas and iliacus muscles. This had been done in one case in which, although the operation had been subcutaneous, injury of the vessels had been avoided. By open section, this danger would be avoided.

DR. J. D. WILSON expressed surprise at the frequent mention of elevations of temperature in the history of Dr. Wyeth's cases, which had been treated antiseptically. Have our teachings been too absolute, or do such temperatures really indicate imperfect antisepsis?

DR. WYETH replied that "the temperature of reaction," occasionally as high as 102 degrees, occurred in the first twenty-four hours, but it usually fell to normal in forty-eight hours. Traumatism, ether, shock, and the use of sublimate combine to produce this reaction, which might still be called an aseptic temperature. He closed the discussion by saying that the simplicity and safety of osteotomy had been shown by the cases he had reported. While no case of equino-varus treated the first two years of life should require tarsotomy, neglected cases will present themselves where nothing but tarsotomy will give relief. The operation may give considerable foreshortening to the foot, but one can certainly correct the deformity, however great, by removing enough bone; and if this be properly done, he believed it to be real conservatism.

CORRESPONDENCE.

THE INTERNATIONAL CONGRESS OF ALCOHOLISM.

THE International Congress of Alcoholism held its meeting in Paris from July 29th to August 1st, under the presidency of Dr. Dujardin-Beaumetz.

Three questions were to be treated principally during the session, the first being on the "Relations existing between the increase of the use of alcohol and the increase of insanity and criminality."

One of the important points in answer to this question was to learn the comparative increase of drinking saloons in different countries. M. Ivernés, Chief of Statistics at the French Ministry of Justice, was charged with the study of this question. Statistics very plainly show that there is an increase of crime in direct proportion to the increase of alcohol taken by each inhabitant. In France from 1873 to 1877, the average annual quantity of alcohol taken by each inhabitant was 2.72 quarts; from 1878 to 1882, 3.53 quarts; from 1883 to 1887, 3.83 quarts. During this time, the number of crimes and offences increased from 172,000 to 195,000, and the

number of insane people from 37,000 in 1872 to 52,000 in 1885.

In Belgium, from 1868 to 1882, each inhabitant on an average took from 7 to 9 quarts of alcohol; the number of crimes and offences increased from 1868 to 1882 from 1900 for every 100,000 inhabitants to 2877. The number of insane, which was 8.240 in 1868, has gone up to 10.020 in 1878.

In Italy, from 1872 to 1885, the quantity of alcohol taken increased from 2.7 quarts to 5 quarts for each inhabitant. From 1879 to 1885 the number of criminals increases from 1400 to 1500; the number of insane from 15,000 to 22,000.

These facts clearly show that there is a direct increase of crime and insanity with the increase in the use of alcohol; on the other hand, an additional proof is the fact that a decrease of the use of alcohol in a country is accompanied by a corresponding decrease in the number of crimes and insanity. In Norway, as was stated by M. Cauderlier, in 1844, each inhabitant on an average took 10 quarts of alcohol; in 1871, only 5 quarts; in 1876, 4 quarts. During this same time, the criminal statistics came down from 249 per 100,000 inhabitants to 207 and 180; while the number of insane patients came down in the same proportion.

The next question was "How to do away with this increase in the use of alcohol?" Dr. Drysdale, of London, recommended the suppression of the use of alcoholic liquors, as he mentioned the fact that life insurance companies find that those who abstain from the use of alcohol live about six years longer than others. This proposition, if it could be accepted, would be a very good one, but it is impracticable, especially in countries where they make wines. This being impracticable, the next proposition to take into consideration is whether it would not be possible to diminish the number of drinking places; but here the members of the Congress became quite divided, some averring that no good can be derived from such a measure, while others sustained it.

M. Cauderlier mentioned the fact that in Holland a law was passed to restrict to a maximum number the drinking places of each city; yet although this law has been strictly carried out, the number of crimes and insanity has not diminished in Holland; which is explainable by the fact that the same quantity of alcohol having been used, it probably was taken by the individuals in their own houses.

M. Milliet, of Switzerland, mentioned the fact that in the district of Thurgovia, where there are a great many drinking places, there are very few alcoholic persons; while in the district of Berne, where very few drinking places can be found, the number of alcoholics is very great.

M. Vaucleroy, of Belgium, said that we know that the quantity of alcohol employed has a tendency to increase every year; while in Holland, where the number of drinking places has been reduced, the quantity of alcohol used has remained the same, it is true, but has not increased, which demonstrates that the promulgation of the law has been of some utility.

Finally, the Congress voted on the two following propositions:

1st. "The increase of the use of alcohol is one of the principal causes of criminality, suicides, and insanity."

This proposition was unanimously adopted.

2d. "The diminution of the number of drinking places being one of the causes of the reduction of the use of alcohol, the Congress invites the government to take the necessary measures to reduce the number of drinking saloons."

This proposition was unanimously accepted, except by M. Milliet, who protested against it.

The second question placed before the Congress was, "The legal means to prevent the accidents, crimes, etc., due to insanity."

M. Motet opened the discussion by drawing attention to the fact that French laws contain no paragraph in regard to the responsibility of an alcoholic who commits a crime; the criminal is condemned more or less seriously according to the circumstances presented, but there is no strict article in regard to it. In civil law, on many occasions, a contract which had been made by a man in an alcoholic state has been declared null; the alcoholic state in such cases has been compared to insanity.

There are three different types of alcoholics: 1st. Simple non-pathological alcoholism. 2d. Pathological alcoholism with cerebral lesions. 3d. Pathological alcoholism with incurable cerebral lesions.

In the first category are placed simple or accidental alcoholism, to which belong the ordinary drinking persons, who, although not drunk, are under the toxic influence of alcohol.

The second division comprises all the pathological forms of alcoholism on the one hand, and all the subacute, acute or chronic mental states which are due to alcoholic intoxication.

In this class are placed all the insane, the degenerated, the epileptics, who are liable, when under the influence of alcohol, to be led to extreme and dangerous acts, which they would never do if not under this toxic influence.

M. Motet thinks that drunkenness is to be punished, as well as the crimes or offences committed while under its influence, when it is simple drunkenness, which could have been prevented by the patient himself. Drunkenness is also punishable when it is proven that alcoholic excitation has been produced for the purpose of committing a crime. There are also punishable, but to a less degree, those whose inferior intellect diminishes their tolerance toward alcoholic liquors on account of their inferior cerebral organization. Again, crimes or offences are not punishable when they have been committed while the individual is in an acute or subacute state of delirium tremens; the same can be applied in chronic alcoholism, where definite cerebral lesions exist; in such cases the patient is to be placed in an asylum until he presents no more alarming symptoms.

M. Decroix did not think it right to consider an alcoholic crime as an irresponsible one, nor does he believe that after one has committed a crime while under the influence of alcoholism, and has been placed in an asylum, that he ought to be allowed to run about after his apparent cure.

M. Duverger examined how the habitual drunkard is treated in other countries. He cited the English law promulgated in 1879, which says that an "habitual drunkard is an individual who cannot be considered as a true insane person, but yet who by his habits of drinking excessively alcoholic liquors is dangerous at certain moments for himself as well as for his sur-

roundings, and is then incapable to direct his person or his business. The habitual drunkard has also a right to ask his admission into a special asylum, but under only very few conditions can he be allowed to leave the asylum before the date which he himself mentioned in his demand."

In Georgia, the State possesses, at Midway, a public asylum for insane, in which are admitted the insane, idiots, epileptics and drunkards who have become insane —a certificate signed by three honorable physicians being necessary to allow the admission of the patient.

In France, although there is a law authorizing the confinement of any alcoholic insane, yet it is very rarely done, and their admission is often a matter of difficulty; this same law also mentions the fact, that any alcoholic who had been confined could be allowed to leave the asylum by a written certificate of all the physicians of the hospital.

The French Society of Temperance has asked that the Minister of Justice should be able to pronounce the interdiction of a person, who, by alcoholic habits, is found oftentimes in an habitual state of insanity, even if that person is married or has parents around him. Again, as the state of chronic alcoholism is not an absolute loss, but only a diminution of responsibility, the Minister of Justice could be allowed to nominate a judiciary counsel, which would be a semi-interdiction. Then if the interdiction or semi-interdiction is pronounced for insanity or feeble-mindedness due to the abuse of alcoholic liquors, the tribunal could be allowed to decide that the said person should be placed in a special asylum.

At the Congress which took place in Bruxelles, some time ago, a proposition of this kind was voted, that "all recognized alcoholics should be placed in interdiction on the demand of their family and the supreme judge of the district, and placed for a determined time in a special asylum."

M. Duverger says, that the fear of being interdicted or semi-interdicted for all business affairs on account of the abuse of alcohol would certainly act as a preventive against alcoholism; and the same fear would also exist as being locked up in a special asylum as an insane patient. In addition, the confinement of alcoholics, as insane or semi-insane, which would prevent them from committing any crime, would contribute to prevent one of the greatest misfortunes which can happen to a society, the condemnation of an irresponsible person.

M. Fournier de Plant approved the interdiction and judiciary counsel as an excellent remedy against alcoholism; he cited the fact of his having beeen on the judiciary counsel of a young and rich alcoholic, who was completely cured of the habit of drinking, on account of the difficulties which this counsel brought in preventing the young man from satisfying his habit.

M. Gouse then, opening another subject, said that it would be wise to recommend the creation of a certain number of drinking places, in the neighborhood of large manufactures, in which only non-alcoholic liquors could be found. These places ought, of course, to be under the direction of a society, which would have no interest in the business; these places could be very cheaply built and would be of very little expense to the temperance societies.

M. Bardy next spoke on the methods of recognizing the falsification of alcoholic liquors, and said that any alcohol containing more than 2 parts in 1000 of impure material ought to be excluded from circulation and ought not to be used.

The Congress then adjourned.

PARIS, August 8, 1889.

THE MORTALITY OF PNEUMONIA IN MALARIAL AND NON-MALARIAL DISTRICTS.

To the Editor of THE MEDICAL NEWS,

SIR: In the admirable paper on the mortality of acute lobar pneumonia, which appeared in the issue of THE MEDICAL NEWS, July 27th, one point of very great interest, as it seems to me, was overlooked, nor has it been considered in any of the other papers on the subject which have appeared from time to time in the medical journals. It is the mortality from this disease in malarial and non-malarial districts respectively. I do not refer to the complication with intermittent or remittent fever. Drs. Townshend and Coolidge refer to the influence of the former of these diseases in their paper, but I refer to the death-rate from pneumonia in malarial and non-malarial districts irrespective of any *apparent* complications with malarial disease in the former.

Conversation with physicians living in malarial regions has satisfied me that the mortality from pneumonia is far greater there than in sections of country where malarial affections do not prevail. My own practice has been for the most part in a section of country where malaria is practically unknown, so that I have been unable to make any comparison myself. I write, therefore, with the hope that such a comparison may be instituted by those in a position to investigate this point.

Possibly a study showing the prevalence of malarial affections and the death-rate of pneumonia at different times in the population supplying some of our large city hospitals with patients would throw light on this important subject.

In Piedmont, Virginia, where malaria does not prevail, pneumonia is considered one of the least dangerous of the acute febrile diseases, and it is rare to hear of a death from this disease, except in the aged or in those who have been habitually intemperate. On the other hand, I am told by physicians living in malarial sections of the State that pneumonia is one of the most fatal diseases with which they have to deal.

It will be time enough to consider the causes of the increased mortality of this disease in malarial districts when the fact of such increased mortality has been definitely established.

I trust that the subject will soon be investigated, and some positive conclusions reached.

Yours truly,

WM. C. DABNEY, M.D.

UNIVERSITY OF VIRGINIA,
August 21, 1889.

THE DIETETIC TREATMENT OF CHRONIC BRIGHT'S DISEASE.

To the Editor of THE MEDICAL NEWS,

SIR: I have read with unusual interest your review of the experiments and conclusions on that very important and interesting subject, "The Dietetic Treatment of Chronic Bright's Disease," by Semmola, Senator, Schreiber, etc. I have been giving some special attention

to this subject in cases recently under treatment by myself. In two cases of chronic diffuse nephritis, I have made milk and raw eggs the principal articles of diet, with the use of tr. ferri. chlor. and trinitrin, alternated with digitalis, with a gradual but steady diminution of albumin. One patient is aged sixty, and quite anæmic. The diet is undoubtedly the most important feature in the treatment in most of these cases.

I hope you will pardon me, but I cannot help adding my mite to a question of so much vital importance to humanity generally, and one upon which there have been so many conflicting opinions expressed and such diversity of views in discussion.

I am, yours very respectfully,

J. R. VINCENT.

WILKINSBURG, PA., Sept. 3, 1889.

NEWS ITEMS.

Statistics from Pasteur's Institute.—The latest returns from Pasteur's Institute, quoted from the *Union Médical*, August 24th, are as follows:

During the month of June of this year, 169 patients were treated at the institute. These comprised 24 who were bitten by animals which were experimentally proven to be suffering from rabies; 115 who were bitten by animals which were reported as mad after veterinary examination; 30 who were bitten by animals suspected of rabies.

The animals in question included 143 dogs, 24 cats, 1 horse, and 1 ass.

One case, which was brought under treatment seventeen days after having been bitten, and who was treated for two weeks, died of hydrophobia ten days later. Another case, which was admitted to the institute almost immediately after being bitten, and who was treated for six days, was seized with rabies nine days later.

Cheap Medical Service.—We read in the *Medical Record* for August 31st, that an association has been formed in New York which advertizes to furnish medical attendance to its subscribers for forty cents a month, and that all prescriptions for its subscribers will be filled by the leading pharmacists of that city for twenty cents each. "In all probability," says the *Record*, "the services and the medicines are not worth even that."

Austrian Pharmacopœia.—We read in the *Wiener klin. Wochenschrift* of July 11th, that the seventh edition of the Austrian *Pharmacopœia* has just been published. From January, 1890, all drugs and preparations must be dispensed according to the new *Pharmacopœia;* the druggist is also compelled to keep in stock a list of surgical supplies, including catgut, bandages, antiseptic gauzes and cotton, protective, drainage tubes, and the like. The new edition will contain a very large number of new drugs.

Fraud in Life Insurance.—A medical man of Belfast, Ireland, has been brought into court on a charge of fraud in regard to an examination for life insurance. He was found guilty of having declared as sound and healthy a person who had cardiac disease, with dropsy, and who died soon after. He was sentenced to imprisonment for six months.

Health in the French Army.—According to the official report of the French Minister of War, the mortality among the French troops has fallen from twelve to eight per thousand during the last year. From 1875 to 1887 there have occurred 141,648 cases of typhoid fever, and 21,116 deaths. The percentage of this disease has materially decreased of late, owing to the attention that is being paid to pure water supply in the barracks. The value of vaccination is proved by the fact that the number of smallpox cases has fallen from 1042 to 242, and these were mostly among recruits.

A Dog without a Brain.—At the last meeting of German neurologists, held in Baden-Baden, Prof. Goltz, of Strassburg, reported a most remarkable experiment. He cut out, in two operations, almost the entire cerebrum of a dog, leaving only the cerebellum and a small portion of the base of the cerebrum. The animal lived for fifty-one days after the last operation, and then died of pneumonia. The remarkable part of the experiment was the influence it had on the dog, who, a few hours after the operation, raised himself on his hind legs, put his paws over the side of his box, and looked inquiringly around. He could walk, eat and drink, and would chew any food that was placed in his mouth. Waking and sleeping alternated naturally. He was restless before feeding, but afterward would become quiet and sleep. A slight touch would awaken him from sleep. During urination and defecation the animal assumed the normal position. Hearing, taste, and smell were, of course, absent.—*Wiener med. Presse*, July 28th.

London Hospitals.—According to the *New York Times*, London has 81 hospitals and 50 dispensaries which are supported by voluntary contributions. These hospitals contain 8012 beds, of which number 5926 were occupied every day of last year, the number of patients being 74,316. Besides these, 1,038,427 out-patients were treated at the dispensaries and out-service departments of the hospitals. How many recurrent cases are included in these aggregates it is not possible to discover, but the reports do not suggest that there are any, so that if the statements are absolutely correct, they show that fully one in every four of the inhabitants of London receives gratuitous medical treatment when ill, a condition which at least suggests large abuse of this form of charity and want of vigilance in its administration.

New Method of Precipitating Sewage.—The problem of the disposal of the sewage of large towns has long defied the efforts of sanitary engineers to cope with it in a satisfactory manner. A new method of sterilizing and precipitating sewage has just been brought out which, it is claimed, accomplishes all that can be required of it at as little cost as any such system can be worked. The method has been put in practice experimentally at the Wimbledon sewage works, England. The principle underlying this plan of dealing with sewage is the employment of "amine" salts, in combination with milk of lime. At Wimbledon herring brine is used, and on mixing with the lime a very soluble gaseous reagent is evolved, to which the inventor has given the name of "Amerinol." This reagent possesses a peculiar briny odor, and when introduced into sewage is said rapidly to extirpate all microörganisms capable of causing putre-

faction or disease. The effect is almost instantaneous. By the action of the lime violent flocculation is caused, and subsidence takes place in about half an hour, the putrid smell of the sewage being replaced by the peculiar briny odor. According to Dr. Klein, the destruction of microörganisms is absolute. The total cost per annum of treating London sewage by this method is put at £125,000. Should the residue prove to possess any value for agricultural purposes its sale would tend still further to reduce the expense.—*Medical Press and Circular*, August 31, 1889.

Vaccination in Japan.—Vaccination has been obligatory for some years in Japan, and every infant is required by the police to be vaccinated. The value of the procedure is, however, well recognized by the people themselves, and the government hospitals in every town are always thronged with applicants on the weekly "vaccination day." In 1886 there were 1531 vaccinations to each 10,000 inhabitants.

Female Physicians in England.—There are at present 73 female physicians in England holding diplomas and licenses to practise. London possesses 22, other cities 34, and 17 in India are also included. The new Hospital for Women has a staff composed entirely of "lady doctors," although the consulting physicians are of the sterner sex. The medical school for women has a faculty of 48 professors, 4 of whom are ladies, and 91 students.

Typhoid Fever at Basle.—An epidemic of typhoid fever has been raging at Basle since the beginning of June. There have been so far 450 cases, with 31 deaths. The water-supply has been tested chemically and bacteriologically without anything being found to account for the outbreak. The epidemic is now subsiding.

The Death of Professor Loreta.—This eminent man, who was recognized as the leading operator in Italy and one of the foremost practical surgeons of the day, died at Bologna on July 23 by his own hand. This melancholy termination to a brilliant career has caused a most painful sensation to his professional brethren in his own country, where he was universally honored as a practitioner and both revered and beloved as a teacher. Loreta, whose hereditary title of Count was lost in the greater dignity of his professional designation, was born of a noble family at Ravenna, in 1831. Both his preliminary and his strictly medical studies were pursued at Bologna. They were interrupted for a time when he took an active part in the revolutionary movement of 1848, and it was 1858 before he took his degree. The years from 1858 to 1861 were spent in an obscure country practice; but in the latter year he was called to Bologna as head of the anatomical laboratory, and in 1865 he succeeded Rizzoli in the chair of clinical surgery. In spite of the intense activity of his professional life, Loreta found time for politics; he was an ardent Liberal, and some months before his death had been returned to the Italian Parliament by an immense majority of his fellow-citizens. He is best known, perhaps, by his operation for the relief of stricture of the pylorus, and by his method of dilating œsophageal stenosis from below through the cardiac orifice; but his operative work covered the whole field of practical surgery. He was the first to resect the liver, and it is only a few months ago that a memorial tablet commemorating that achievement was placed in the hall of the University of Bologna. His published works include papers on a new method of perineal cystotomy, a new method of treating aneurism, remote effects of contusions of the head, and many others. Bologna honored the deceased surgeon with a public funeral.—*London Med. Recorder*, Aug. 20, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 3 TO SEPTEMBER 9, 1889.

P. J. A. CLEARY, *Major and Surgeon.*—Is hereby granted leave of absence for two months, on surgeon's certificate of disability.—*S. O. 59, Headquarters Division of the Pacific, San Francisco, Cal.*, August 27, 1889.

With the approval of the Secretary of War, the leave of absence granted JOHN H. JANEWAY, *Major and Surgeon*, in S. O. 52, July 29, 1889, Division of the Pacific, is extended two months.—Par. 1, *S. O. 206, A. G. O.*, September 5, 1889.

By direction of the Secretary of War, a Board of Medical Officers, to consist of EDWARD P. VOLLUM, *Colonel and Surgeon*; HENRY MCELDERRY, *Major and Surgeon*; WASHINGTON MATTHEWS, *Major and Surgeon*; and JAMES C. MERRILL, *Captain and Assistant Surgeon*, is constituted, to meet in New York City, on the first day of October, 1889, or as soon thereafter as practicable, for the examination of Assistant Surgeons for promotion, and of candidates for admission into the Medical Corps of the Army. The Board will be governed in its proceedings by such instructions as it may receive from the Surgeon-General.—Par. 1, *S. O. 203, A. G. O.*, September 2, 1889.

EWING, CHARLES B., *Captain and Assistant Surgeon.*—Is granted leave of absence for twenty-one days, to commence on or about September 21, 1889, provided that at time the Post Surgeon, now on leave, has returned to duty.—Par. 5, *S. O. 201, Headquarters Division of the Atlantic, Governor's Island, New York City*, September 4, 1889.

The garrisons of Fort Laramie, Wyoming Territory; Fort Hays, Kansas, and Fort Lyon, Colorado, will be withdrawn, and the posts named will be abandoned as soon as it can be done with due regard to economy.—*G. O 69, A. G. O.*, August 31, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE TWO WEEKS ENDING SEPTEMBER 7, 1889.

NASH, F. S., *Passed Assistant Surgeon.*—Detached from the "Dale," and ordered to duty in the Bureau of Medicine and Surgery.

RUSSELL, A. C. H., *Passed Assistant Surgeon.*—Ordered to Naval Hospital, Yokohama, per steamer of September 28th.

HALL, C. H. H., *Passed Assistant Surgeon*—Detached from Naval Hospital, Yokohama, on reporting of relief, and return home.

WHITE, S. S., *Assistant Surgeon.*—Detached from Naval Hospital, New York, and ordered to the "Minnesota."

STONE, E. P., *Assistant Surgeon.*—Detached from the "Minnesota," and wait orders.

BRYANT, P. H., Detached from the "Ajax," and ordered to Naval Hospital, Norfolk, Virginia.

WENTWORTH, A. R., *Assistant Surgeon.*—Detached from Naval Hospital, Norfolk, Virginia, and wait orders.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*